Overland STORAGE™

NEO SERIES LIBRARIES

User & Installation Manual

PN: 104248-105

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Preface

Purpose of This Manual

This manual provides step-by-step installation instructions, and information required for ongoing use and maintenance of the Neo Series Library Module tape drive systems. This manual is written for the installer and user of this equipment. The following information is contained in this manual:

Chapter 1: **"Introduction"** - Provides an introduction to the Neo Series Libraries, along with a brief description of the benefits, features and tape capacities, drives and lists the models covered in this manual.

Chapter 2: **"Installation"** - Presents step-by-step procedures for unpacking and installing the Neo Series Library Module, interface connections and a description of the configuration options.

Chapter 3: **"Library Configuration"** - Explains how to configure the Neo Series Libraries for normal operation. Sections in this chapter include: Default Settings, SCSI ID, Reserved Slots, Local Network.

Chapter 4: **"Operation"** - Describes front panel operations for the Neo Series Libraries, inserting and removing tape cartridges, and tape requirements.

Chapter 5: **"Maintenance"** - Describes procedures for using and storing the cleaning cartridge with the Neo Series 2000/4000 Libraries, required slot location, running the cleaning cartridge from the front panel, and the Auto Clean mode.

Chapter 6: **"Troubleshooting"** - Provides problem diagnosis, error recovery procedures, and Fault Symptom Codes to aid in troubleshooting potential error conditions with the Neo Series Libraries.

Chapter 7: **"NeoCenter Utility"** - Allows user to configure the Neo Series Libraries using the familiar Windows graphical user interface, such as, library parameters, IP addresses, parameters for remote FTP uploads and more

Chapter 8: **"Web TLC"**- Describes the interface device built into your Neo Series Library that lets you monitor and control your automated tape library from any terminal connected to your network or the Internet.

Appendix A: **"Specification"** - Contains Neo Series Libraries specific specifications, and EMI compliance information.

Appendix B: **"Adding a Tape Drive"** - Contains procedures for the adding of an additional drive for your Neo Series 2000/4000 Library.

Appendix C: **"Elevator Assembly Installation"** - Describes the major steps needed to install an Elevator Assembly into a Neo Series multi-module environment. The robotics in each Neo Series library exchanges cartridges by means of the Elevator Assembly.

Appendix D: **"Partitioning"** - Describes the the major steps needed to install and properly configure cabling for the Partitioning Controller. Partitioning allows multiple servers to use the same physical library while maintaining control of their allocated resources.

Appendix E: **"Tape Drive Technologies"** - Brief description of the various tape drive technologies employed in the Neo Series libraries.

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Chapter 1 Introduction

Introduction

The Overland Storage Neo Series™ tape libraries are for enterprises that measure backup in terabytes and have no tolerance for downtime.

The Neo Series libraries support the latest in tape drive technology, DLT8000, Super DLT (SDLT), or LTO Ultrium drives. Designed for backup operations with high-end networks and high-performance servers, the libraries are the next generation performers in high-volume backup and archival service. The libraries also feature high availability, maximum storage density, and easy serviceability.

This chapter describes the major components of the Neo Series 4000 and 2000 library modules, including:

- Models and accessories
- Multi-module library systems
- Library interfaces
- Virtual Interface Architecture (V.I.A) Options
- Tape drives
- Magazines
- Power supply
- Library controller board
- Robotics
- Front panel indicators

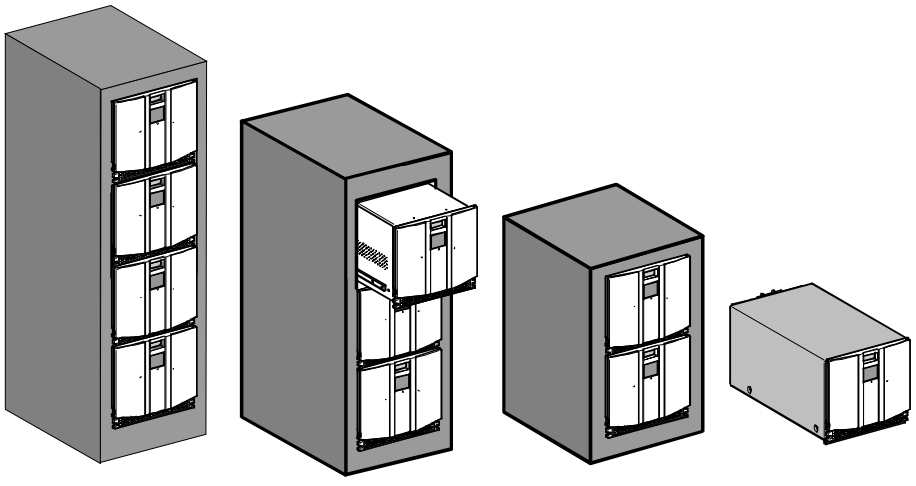


Figure 1–1. Neo Series 4000 Libraries

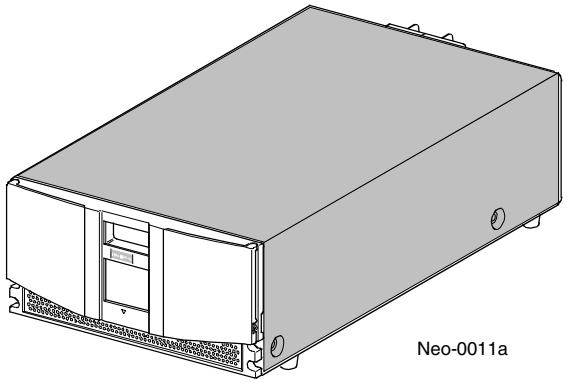


Figure 1–2. Neo Series 2000 Library

Models and Accessories

Models

Neo Series library modules can operate as stand alone units or can be rack-installed to form a larger integrated library system. The Neo Series 4000 library module can be configured for zero, two or four tape drives along with four removable tape cartridge magazines. The Neo Series 2000 library module can be configured for zero, one or Two tape drives along with two removable tape cartridge magazines. Library module robotics are capable of random or sequential tape cartridge operation.

Table 1–1 Models & Slot Capacities

Model	Drive/	Slots	Capacity		
			SuperDLT	DLT8000	LTO
Neo 2000	1,2	26 DLT/SDLT, 30 LTO	5.7 TB	2.1 TB	6.0 TB
Neo 4100	1-4	52 DLT/SDLT, 60 LTO	11.4 TB	4.1 TB	12 TB
Neo 4200	2-8	104 DLT/SDLT, 120 LTO	22.8 TB	8.3 TB	24 TB
Neo 4300	3-12	156 DLT/SDL,T 180LTO	34.2 TB	12.4 TB	36 TB
Neo 4400	4-16	208 DLT/SDL,T 240 LTO	45.6 TB	16.6 TB	48 TB
Capacity Expansion Chassis(s)*					
26/30EXP	0-2	26 DLT/SDL,T 30 LTO	5.7 TB	2.1 TB	6 TB
52/60EXP	0-4	52 DLT/SDLT, 60 LTO	11.4 TB	4.1 TB	12 TB
* Expansion chassis contain a library controller controller card and no drives.					

Neo Series Automated Tape Libraries are offered in a variety of configuration options depending on desired media, accessories and interface architectures.

Library Interfaces

The Neo Series Library Modules includes as standard, a SCSI interface-to-host system that supports Low Voltage Differential (LVD) or Single Ended (SE) attached. Other interfaces, including HVD SCSI and Fibre Channel are available with optional Virtual Interface Architecture (V.I.A.™) cards. The tape drives and robotics control functions with each using separate SCSI connections and SCSI ID addresses. The drive SCSI I/O is provided through VHDCI, 68-pin, SCSI connectors located at the rear of the unit directly under the tape drives. The Robotics SCSI I/O is provided through VHDCI, 68-pin, SCSI connectors located on the library controller board.

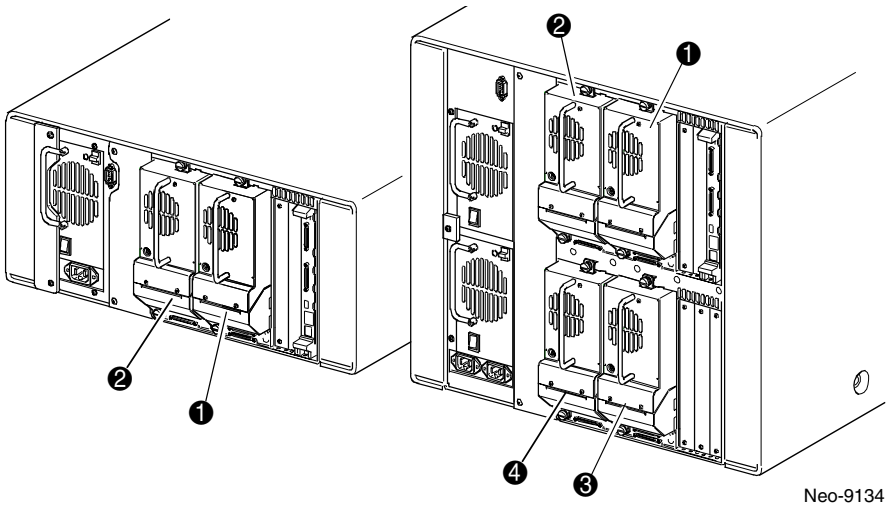
Virtual Interface Architecture

Virtual Interface Architecture provides you with the ability to change or add highly integrated interface options to both the Neo Series 4000 and 2000 libraries, offering tremendous flexibility and investment protection. Virtual Interface Architecture is your gateway for customizing your Neo Series library modules to provide seamless integration to your storage network backup needs. Options currently available are:

- Fibre Channel Option (FCO), provides connectivity to Fibre-based SANs.
- High Voltage Option (HVO), provides Connectivity to High Voltage Differential SCSI systems.
- Logical Partitioning Option (LPO), provides logical soft partioning to the magazine level between heterogeneous servers and backup software applications.

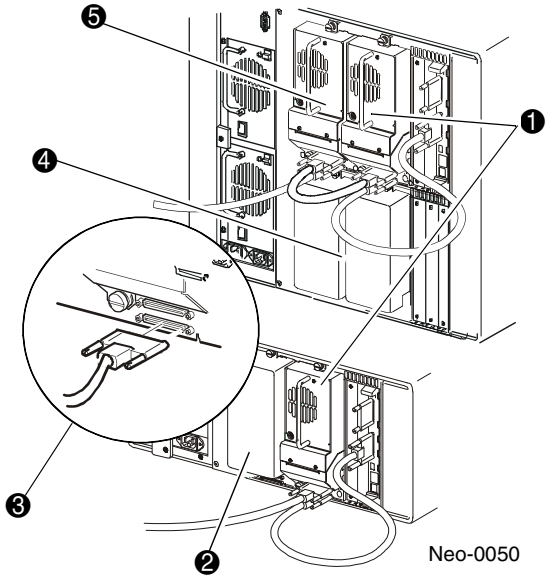
Tape Drives

The Neo Series library supports a 0-4 drive combination (see Figure 1–3). All inactive tape drives are hot-swap capable. SCSI I/O is accomplished through two VHDCI-series, 68-pin, SCSI connectors located at the rear of the library directly under each tape drive, see Figure 1–4.



❶ **Tape Drive 1**
❷ **Tape Drive 2**
❸ **Tape Drive 3**
❹ **Tape Drive 4**

Figure 1–3. Neo Series Tape Drive Locations



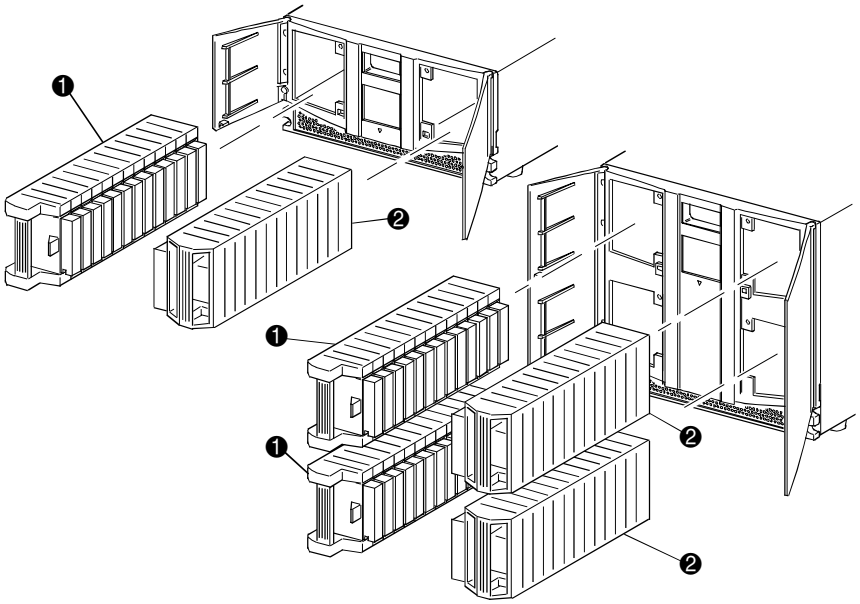
❶ Drive 1
❷ Drive 2
❸ VHDCI, 68-pin Connectors
❹ Drive 3, 4 Bay

Figure 1–4. Tape Drive Connectors

Magazines

Neo Series Magazines

The Neo Series Libraries contain two or four removable tape cartridge magazines that are accessible through the front doors (see Figure 1–5). The front doors of either unit are opened using the GUI touch screen on the control panel.



❶ Left Magazine(s) (with integrated mail slot)
❷ Right Magazine(s)

Figure 1–5. Neo Series Library Magazines

Mail Slots

Looking from the front of Neo Series libraries, the left tape magazines also include a mail slot, which is accessible when that magazine slot's door is open (see Figure 1–6). Pivoting forward, this mail slot feature lets you insert or remove a single media cartridge without interrupting library operation by removing the entire magazine. If a full tape cartridge magazine is required, you can configure the library to disable the mail slot feature. The right tape magazine contains fixed cartridge slots (no mail slot feature), so it retains its full capacity at all times.

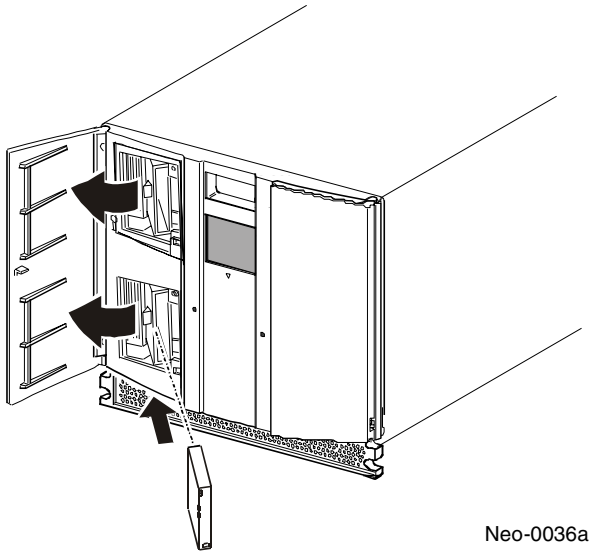


Figure 1–6. Mail Slot Access

Power Supplies

The two Neo Series 4000 power supplies provide redundancy for mission critical operations and avoid power interruption to the library. Both power supplies share the load under normal operating conditions. However, if one of the power supplies fails, the other will assume the full load.

The two modular power supplies from the rear of the library (see Figure 1–7). These auto-ranging power supplies are capable of using any nominal AC voltage between 100 and 240 Vac power, at 50 Hz or 60 Hz. A tool is required to remove the power supply from its bay.

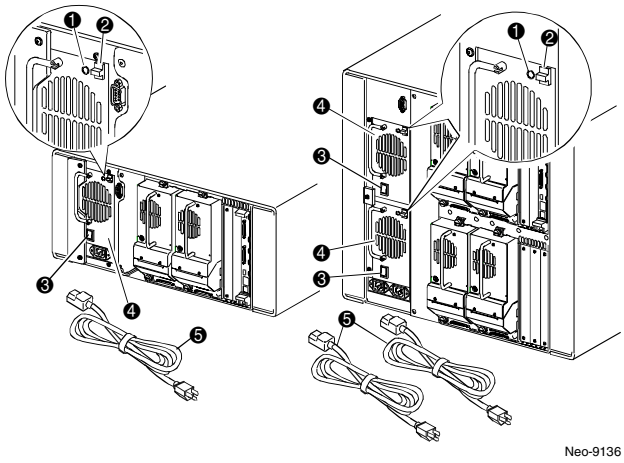
Power to the libraries is supplied through AC connectors at the rear panel of the power supply. Library power is normally controlled from the Graphical User Interface (GUI) touch screen; however, a manual power disconnect switch, located at the rear of the power supply, may also be used.

CAUTION:

The power supply is NOT to be removed by the operator. Hazardous voltage is present in the cavity if the power cord is not removed.

VORSICHT:

Die Stromversorgungseinheit darf nicht vom Bedienungspersonal entfernt werden. Gefährliche Stromspannung tritt im Hohlraum auf, wenn das Netzkabel nicht entfernt ist.



❶ **Power On LED (lights after touching front panel GUI touch screen**
❷ **Power Supply Release Latch**
❸ **Power Switch**
❹ **Power Supply**
❺ **AC Power Cord**

Figure 1–7. Neo Series Power Supplies

Library Controller Board

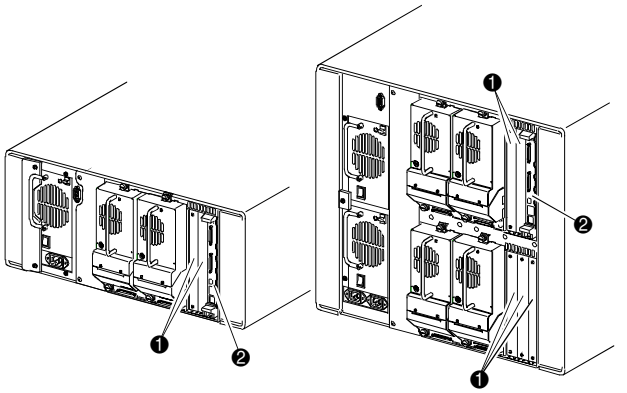
The libraries contain a rear-access card cage, (see Figure 1–8) and a Compact PCI backplane. This backplane contains the plug-in connectors for the library's controller board and Virtual Interface Architecture option add-in card slots, the V.I.A. - Fibre Channel Option (FCO), High Voltage Option (HVO) and Library Partion Option (LPO), or a combination.

The library controller board contains a single microprocessor and associated logic devices to control all robotics operations and manage overall library functions. The microprocessor enables the SCSI interface between the library and the host system, including Web TLC (Total Library Control).

Web TLC is one of the functions built in to the library controller board. Web TLC enables the you to remotely monitor and control the tape library from any terminal in a local network or the internet.

The library controller board is installed in a card cage at the rear of the library which also contains the VIA™ Options, and can be serviced without requiring special tools.

NOTE: The library controller card must be installed in the right slot of the upper card cage. the lower card cage does not support the required connections for proper operation of the library controller board.



❶ Virtual Interface Architecture Slots
❷ Library Controller Board

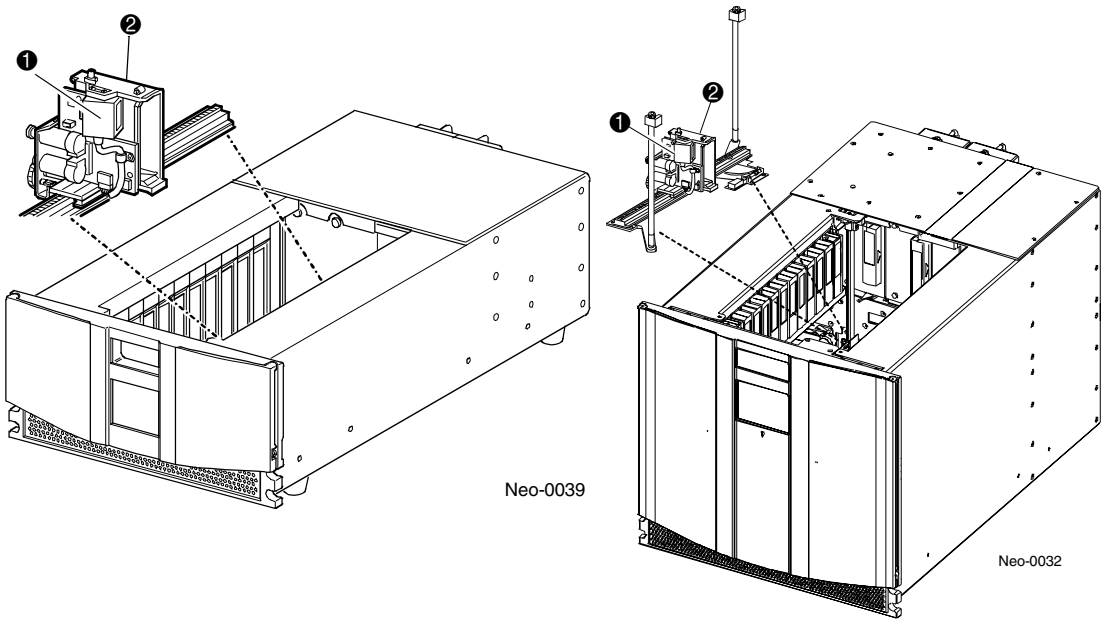
Figure 1–8. Library Controller Card and PCI Slots

Robotics

The library module robotics consists of a cartridge shuttle, motor hardware, motor drives, and other support electronics (see Figure 1–9). These robotics are capable of picking and placing tapes throughout a 180-degree arc that consists of the tape drives, tape cartridge magazines, and an optional XpressChannel.

The cartridge shuttle assembly includes a mounted barcode reader for scanning tape cartridges installed in the magazines and tape drives.

NOTE: Both a full barcode reader scan and a physical scan are conducted each time the library is initially powered up or each time a tape magazine is exchanged.



❶ Attached Bar Code Reader
❷ Cartridge Shuttle Assembly

Figure 1–9. Neo Series Library Robotics

Front Panel Indicators

The Neo Series Library modules front panel indicators consist of the following:

- Viewing window - lets you visually check the unit's internal operations.
- GUI touch screen - manually operated to setup and configure the library.
- Library module status LED - displays the unit's operational status.

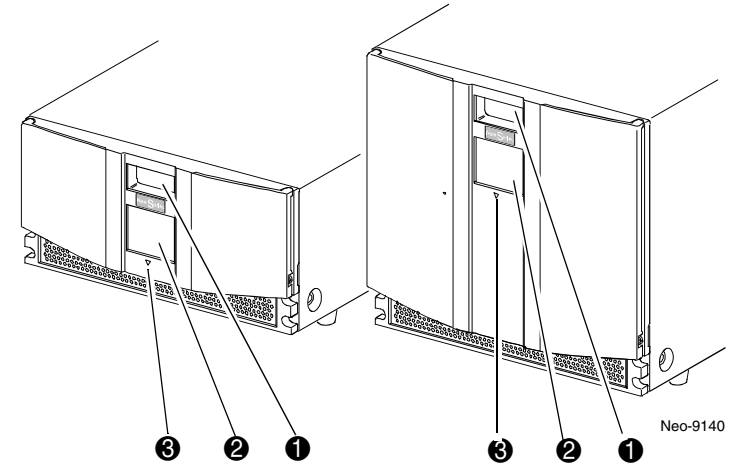


Figure 1–10. Neo Series Front Panel

Multi-module Library Systems

The Neo Series Library Modules are modular expandable tape libraries that may be configured in a variety of module and drive combinations. The drives are mounted in a removable drive “shoe”, allowing easy user installation and removal and to allow swapping a failed drive without requiring that the server or library power be cycled.

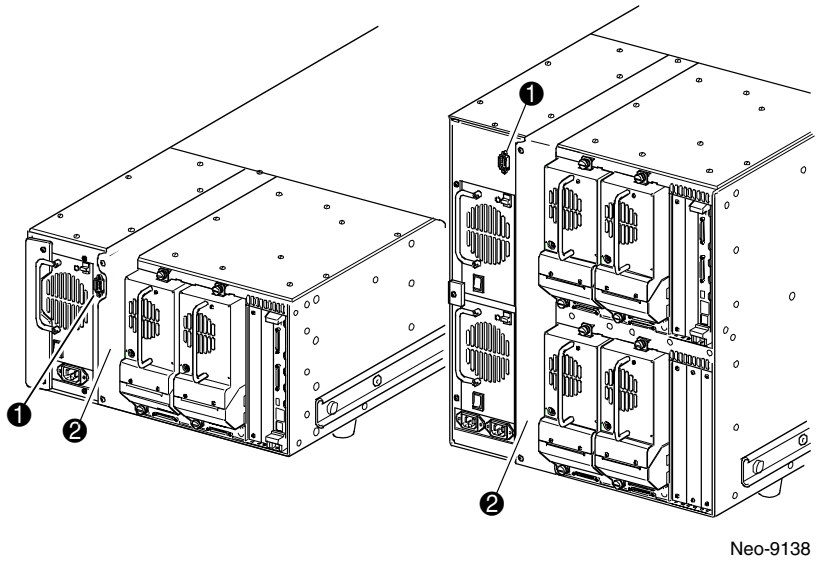
Current releases of the Neo Series library can be stacked in a scalable combination with additional 26/30 or 52/60 expansion library modules to form a multi-module, rack-mounted configuration. Through use of a rear-mounted elevator assembly, all multi-module libraries in the stack can operate together as a single virtual library system. Stacked units are interconnected through their rear panel Ethernet connections and an external Ethernet router mounted to the rack, (The router occupies a height of 1U when rack mounted).

Any combination of modules, not exceeding 40U may comprise the library module system. A library module system appears to the host computer system and library control software as a single library. For multi-module applications, the top library module becomes the primary master module and all other lower libraries are slave modules.

NOTE: The elevator assembly continues to function each time a slave library is physically removed from the rack configuration during normal library operation.

The library’s robotics pick and place tape cartridges into a movable elevator that encompasses the full length of the elevator assembly. In this manner, individual tapes can be passed up or down between the libraries contained in the multi-unit library configuration. Robotics access to the elevator assembly is located at the rear of the library

The Neo Series Libraries also support fail-over protection for multi-unit library configurations. In the event of a master module failure, a pre-selected slave module becomes (operator initiated) the fail over master. For example, if the primary master library fails, you can invoke the library system's fail-over mode. In this mode, one of the connected slave units serves as the secondary master library that now communicates with the host system through the SCSI interface. The source of power to the elevator assembly's drive motor is switched from the original primary master library to the newly-assigned secondary master library.



❶ Elevator Assembly Interface Connector
❷ Elevator Assembly Mounting Location

Figure 1–11. Elevator Assembly Location

Chapter 2 Installation

This chapter explains how to install the Neo Series Library Modules. Sections in this chapter include:

- Setting up the tabletop models of the Neo Series Library Modules.
- Setting up the rackmount model of the Neo Series Library Modules.
- SCSI cable configurations for the Neo Series Library Modules
- Applying power to the libraries

Setting up the Tabletop Models

Neo Series Library tabletop models require no mechanical assembly for mounting (see Figure 2–1). Place the library on a desk, table, or other stable, horizontal surface. Ensure the cooling grills at the front and the fans at the rear of the library are not obstructed. Allow 12 inches (30.4 cm) of clearance at the front and 6 inches (15.2 cm) at the rear of the units to allow for adequate cooling.

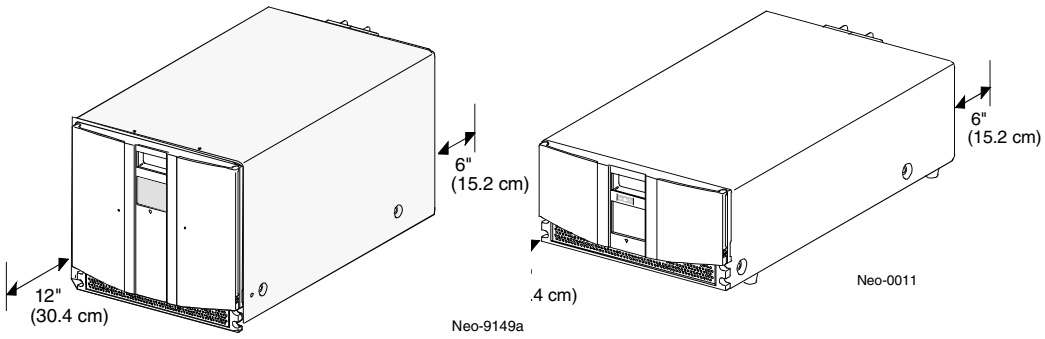


Figure 2–1. Tabletop Model Clearances

WARNING: To reduce the risk of electrical shock, fire, or damage to the equipment, do not plug telephone or telecommunications connectors into this receptacle.

NOTE: Any RJ-45 receptacle marked with these symbols indicates a Network Interface Connection.

Setting up the Rackmount Model

A provided RETMA RACK MOUNTING TEMPLATE is required for rack mounting your library module/s in to a RETMA rack. See "Installation Considerations"in Appendix A for considerations relating to multi-unit rack mounted environments. Instructions for attaching the rack mount slides and installing the library module are provided on the template, (see Figure 2–2).

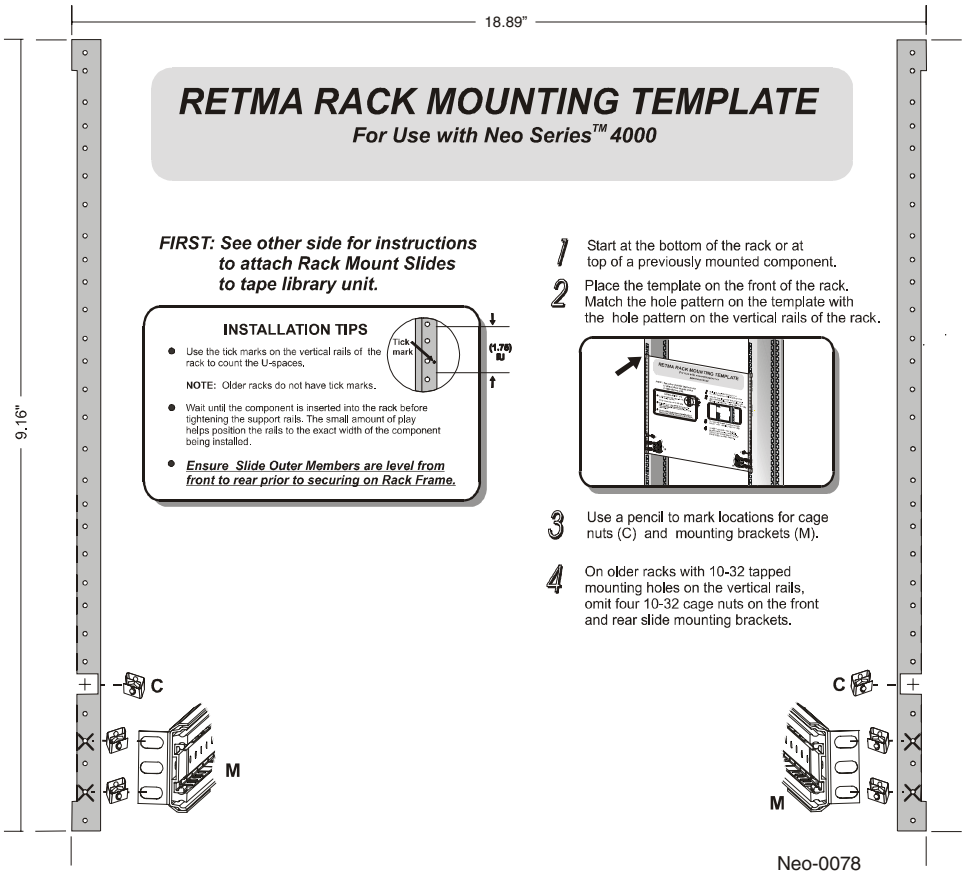

18.89"
9.16"
RETMA RACK MOUNTING TEMPLATE
For Use with Neo Series™ 4000
FIRST: See other side for instructions to attach Rack Mount Slides to tape library unit.
INSTALLATION TIPS
Use the tick marks on the vertical rails of the rack to count the U-spaces.
NOTE: Older racks do not have tick marks.
Tick mark
(1.75) RU
Wait until the component is inserted into the rack before tightening the support rails. The small amount of play helps position the rails to the exact width of the component being installed.
Ensure Slide Outer Members are level from front to rear prior to securing on Rack Frame.
1 Start at the bottom of the rack or at top of a previously mounted component.
2 Place the template on the front of the rack. Match the hole pattern on the template with the hole pattern on the vertical rails of the rack.
3 Use a pencil to mark locations for cage nuts (C) and mounting brackets (M).
4 On older racks with 10-32 tapped mounting holes on the vertical rails, omit four 10-32 cage nuts on the front and rear slide mounting brackets.
C
M
C
M
Neo-0078

Figure 2–2. Rack Mounting Template Front

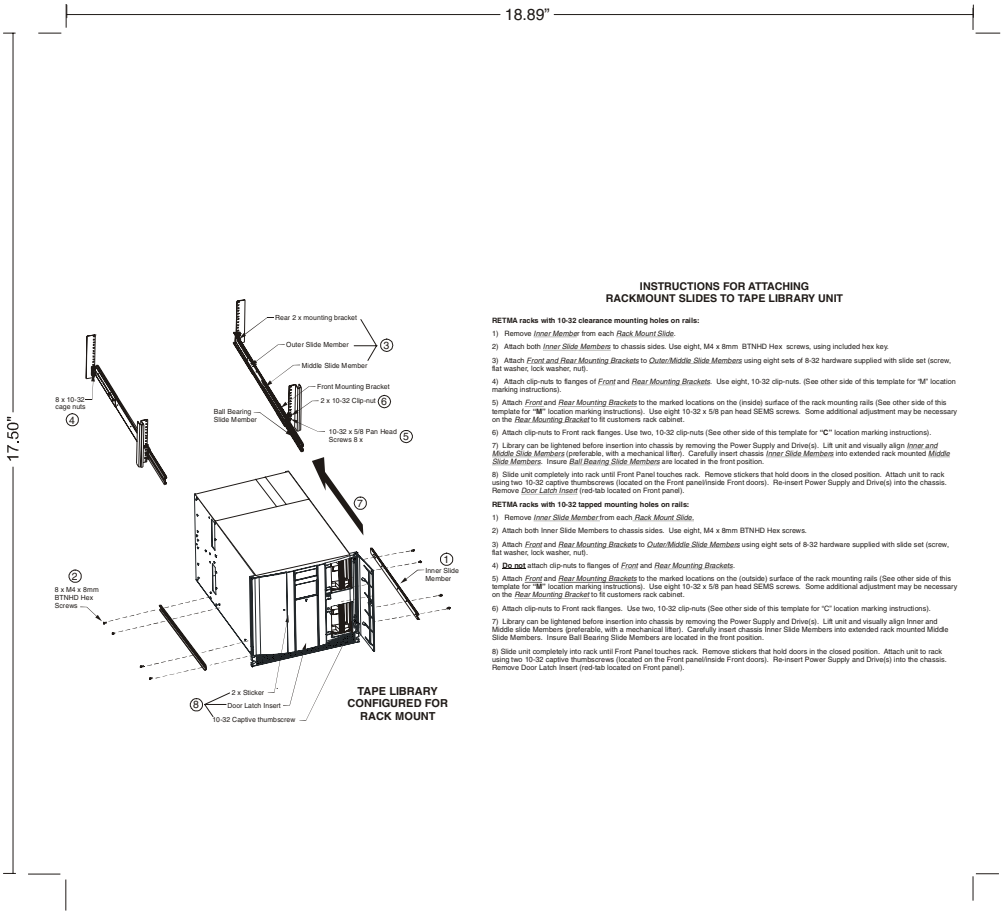

18.89"
17.50"
Rear 2 x mounting bracket
Outer Slide Member
③
Middle Slide Member
Front Mounting Bracket
2 x 10-32 Clip-nut ⑥
Ball Bearing Slide Member
10-32 x 5/8 Pan Head Screws 8 x
⑤
8 x 10-32 cage nuts
④
⑦
①
Inner Slide Member
②
8 x M4 x 8mm BTNHD Hex Screws
⑧
2 x Sticker
Door Latch Insert
10-32 Captive thumbscrew
TAPE LIBRARY CONFIGURED FOR RACK MOUNT
INSTRUCTIONS FOR ATTACHING RACKMOUNT SLIDES TO TAPE LIBRARY UNIT
RETMA racks with 10-32 clearance mounting holes on rails:
1) Remove Inner Member from each Rack Mount Slide.
2) Attach both Inner Slide Members to chassis sides. Use eight, M4 x 8mm BTNHD Hex screws, using included hex key.
3) Attach Front and Rear Mounting Brackets to Outer/Middle Slide Members using eight sets of 8-32 hardware supplied with slide set (screw, flat washer, lock washer, nut).
4) Attach clip-nuts to flanges of Front and Rear Mounting Brackets. Use eight, 10-32 clip-nuts. (See other side of this template for "M" location marking instructions).
5) Attach Front and Rear Mounting Brackets to the marked locations on the (inside) surface of the rack mounting rails (See other side of this template for "M" location marking instructions). Use eight 10-32 x 5/8 pan head SEMS screws. Some additional adjustment may be necessary on the Rear Mounting Bracket to fit customers rack cabinet.
6) Attach clip-nuts to Front rack flanges. Use two, 10-32 clip-nuts (See other side of this template for "C" location marking instructions).
7) Library can be lightened before insertion into chassis by removing the Power Supply and Drive(s). Lift unit and visually align Inner and Middle Slide Members (preferable, with a mechanical lifter). Carefully insert chassis Inner Slide Members into extended rack mounted Middle Slide Members. Insure Ball Bearing Slide Members are located in the front position.
8) Slide unit completely into rack until Front Panel touches rack. Remove stickers that hold doors in the closed position. Attach unit to rack using two 10-32 captive thumbscrews (located on the Front panel/inside Front doors). Re-insert Power Supply and Drive(s) into the chassis. Remove Door Latch Insert (red-tab located on Front panel).
RETMA racks with 10-32 tapped mounting holes on rails:
1) Remove Inner Slide Member from each Rack Mount Slide.
2) Attach both Inner Slide Members to chassis sides. Use eight, M4 x 8mm BTNHD Hex screws.
3) Attach Front and Rear Mounting Brackets to Outer/Middle Slide Members using eight sets of 8-32 hardware supplied with slide set (screw, flat washer, lock washer, nut).
4) Do not attach clip-nuts to flanges of Front and Rear Mounting Brackets.
5) Attach Front and Rear Mounting Brackets to the marked locations on the (outside) surface of the rack mounting rails (See other side of this template for "M" location marking instructions). Use eight 10-32 x 5/8 pan head SEMS screws. Some additional adjustment may be necessary on the Rear Mounting Bracket to fit customers rack cabinet.
6) Attach clip-nuts to Front rack flanges. Use two, 10-32 clip-nuts (See other side of this template for "C" location marking instructions).
7) Library can be lightened before insertion into chassis by removing the Power Supply and Drive(s). Lift unit and visually align Inner and Middle slide Members (preferable, with a mechanical lifter). Carefully insert chassis Inner Slide Members into extended rack mounted Middle Slide Members. Insure Ball Bearing Slide Members are located in the front position.
8) Slide unit completely into rack until Front Panel touches rack. Remove stickers that hold doors in the closed position. Attach unit to rack using two 10-32 captive thumbscrews (located on the Front panel/inside Front doors). Re-insert Power Supply and Drive(s) into the chassis. Remove Door Latch Insert (red-tab located on Front panel).

Figure 2–3. Rack Mounting Template Back

Any product or assembly marked with these symbols indicates that the component exceeds the recommended weight for one individual to handle safely.
WARNING: To reduce the risk of personal INJURY or damage to the equipment, observe local occupational health and safety requirements and guidelines for manual material handling.

Jedes Produkt oder Bauteil, gekennzeichnet mit diesen Symbolen, bedeutet, daß es das empfohlene Gewicht zur sicheren Handhabung durch eine einzelne Person überschreitet.
ACHTUNG: Um das Risiko von Personen- oder Sachschäden zu vermindern, beachten Sie die lokalen Arbeitsbestimmungen für Gesundheitsschutz und Sicherheit und Richtlinien für manuelle Handhabung von Materialien.

Rackmount Model Installation Preparation

Setting up the rackmount model requires a template, storage cabinet slide rails, and a mechanical lift to physically install the library in a storage cabinet.

To setup the rackmount model:

1) Ensure you have adequate space available in the rack.

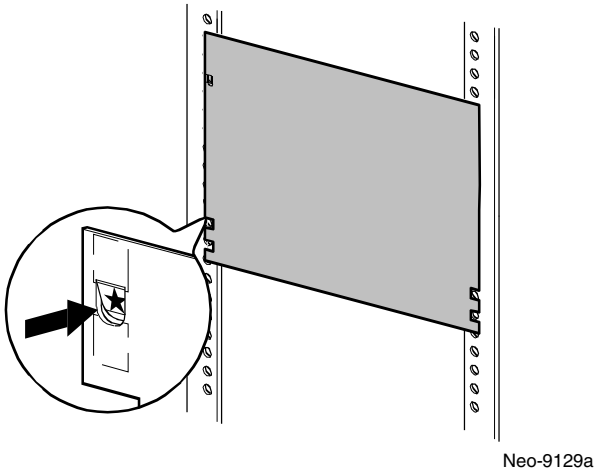


Figure 2–4. Neo Series Template

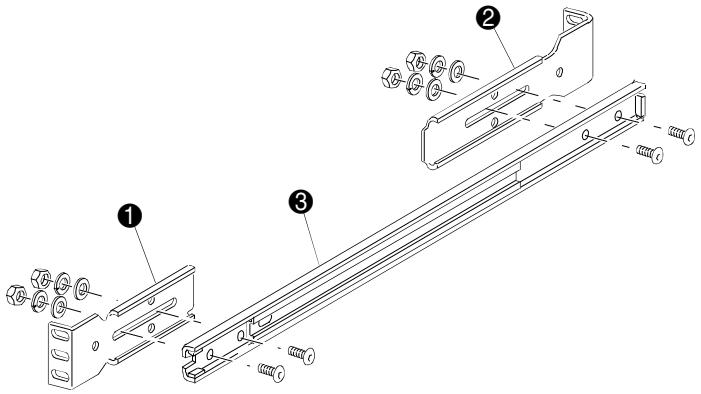
2) Use the template that is shipped with the library to mark the location of the mounting hardware on the mounting rails of the storage cabinet (see Appendix 2–4).
   a. Push back the tabs in the top of the template and place them in the correct holes in the mounting rack. Match up the hole pattern indicated on the sides of the template with the hole pattern in the mounting rack.
   b. Make sure to begin measuring in the correct place. If a module already installed immediately below the planned position of the new module, place the template against the front of the mounting rack and rest it on top of the previously installed module.
   c. Use the front of the template to mark the attachment points for mounting brackets, rails, components, or cage nuts on the back of the storage cabinet.
   d. Use the back of the template to mark the attachment points for mounting brackets, rails, components, or cage nuts on the back of the storage cabinet.
3) Remove the template.
4) See section titled "Installing The Slide Members".

Installing The Slide Members

Perform the following steps to install the slide members for the rackmount model:

1) If not already installed, attach the front (shorter) ❶ and rear (longer) ❷,mounting brackets to the outer and middle slide members ❸, (see Appendix 2–5).

IMPORTANT: Fully tighten the front mounting bracket screws. Leave the rear mounting bracket screws "finger tight" to prevent binding when mounting the library module. Once distance between rails is set, screws shown here should be tightened



Neo-0010

❶ Front Mounting Bracket
❷ Rear Mounting Bracket
❸ Middle Slide Member

Figure 2–5. Installing the Slide Members

2) Attach the slide members using the suppled fasteners. Install the clip nuts ❶ on the inside of the slide member's front and back mounting bracket only if the vertical rail mounting holes are not tapped,(see Figure 2–6).

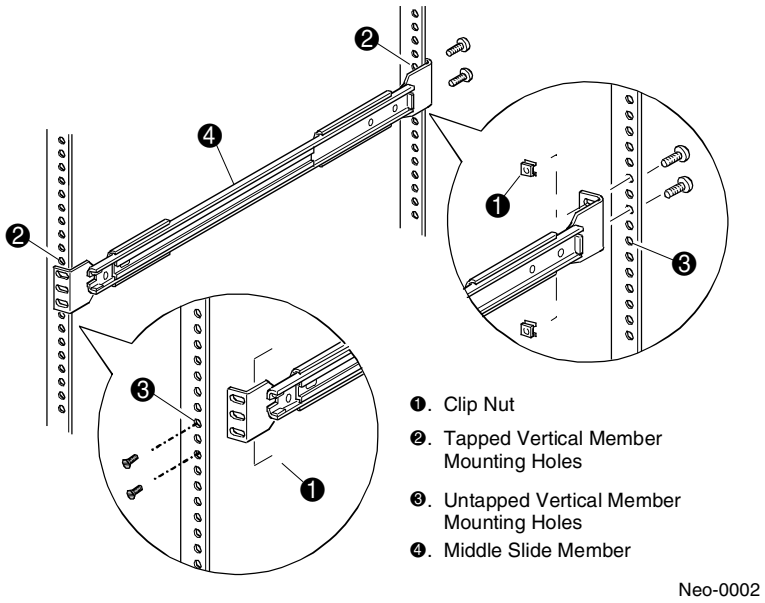

❶. Clip Nut
❷. Tapped Vertical Member Mounting Holes
❸. Untapped Vertical Member Mounting Holes
❹. Middle Slide Member
Neo-0002

Figure 2–6. Installing Slide Member Fasteners

3) Push the middle slide member ❹ as far as possible to the front of the slide member assembly.

Installing The Library Module

The following instructions illustrate how to insert your library module in a RETMA rack, (see Figure 2–7).

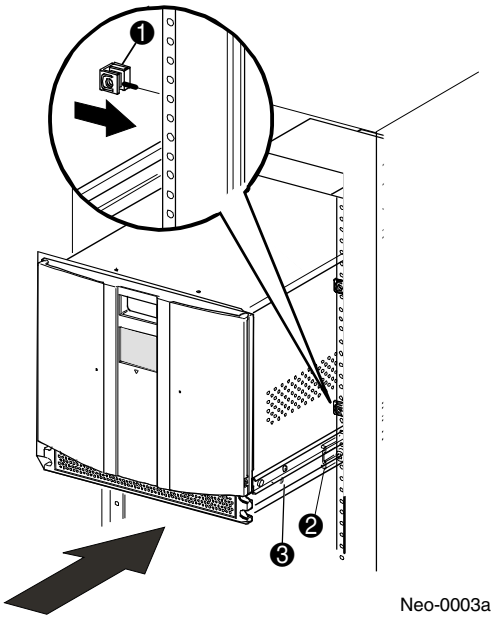


Figure 2–7. Installing The Library Module

WARNING:

The library module can be lightened before insertion into the rack by removing the power supply and tape drives. It is recommended the library module be lifted with a mechanical lifter, or two person minimum without lift.

1) Mark the attachment points for the library retaining screws using the supplied mounting template.
2) Install the two clip nuts on each of the RETMA rack's front vertical rails.
3) Lighten the library module before insertion into chassis by removing the Power Supply and Drive(s).
4) Confirm that the bearing carrier is in the retained position.
5) Lift unit and visually align Inner and Middle slide Members (mechanical lifter recommended).
6) Carefully insert chassis Inner Slide Members into extended rack mounted Middle Slide Members.
7) Verify the Ball Bearing Slide Members are located in the front position.
8) Slide library module completely into rack until Front Panel touches the rack.
9) Remove and discard the tape that hold the doors in the latched position, leaving the doors open.

10)Attach unit to rack using two 10-32 captive thumbscrews (located on the lower left and right Front panel, inside Front doors, Figure 2–9).

11)Re-insert the Power Supply and Drive(s), if removed, into the chassis. Opening Library Module Doors.

12)Fully tighten the rear mounting bracket screws.

Opening The Library Module Doors

1) Verify tape has been removed to open the doors for installation. Remove and discard the pull-tabs used to block the latch mechanism, do not close the doors, (see Figure 2–8).

IMPORTANT: The magazine doors have both an electrical release (via the GUI touch screen ❷) and a manual release, ❶, ❸. It is recommended that the doors are always opened using the GUI touch screen. In an emergency, the doors can be manually opened by pushing in on the mechanical releases directly behind the front panel.

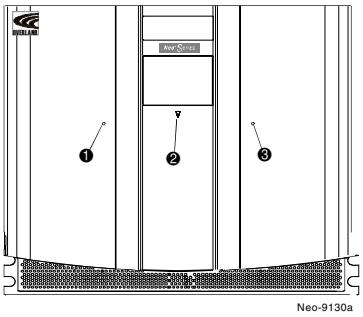


Figure 2–8. Opening Magazine Doors

2) With the magazine doors open, secure the front panel to the storage cabinet using the two captive retaining screws ❶ and ❷, (see Figure 2–9).

3) Close the doors.

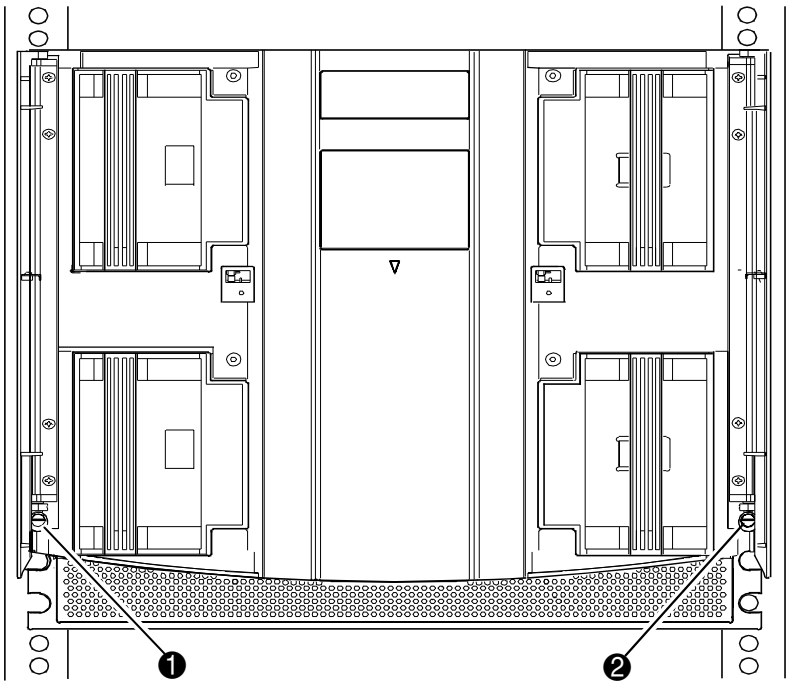


Figure 2–9. Library Retaining Screws

4) Apply AC power to your Neo Series library module. See"Turning On The Libraries (2000 and 4000)" located later in this section.

SCSI Cable Configurations

This section describes the supported SCSI cable configurations for the Neo Series 4000 Library modules.SCSI configurations include:

- One tape drive single host system
- Two tape drives single host system
- Four tape drives single host system
- Two tape drives dual host system
- Four tape drives dual host system

NOTE: This section assumes that the library has been unpacked and setup as a tabletop or rackmount model. Refer to the Neo SeriesNeo Series Library Module Quick Install for more information.

SCSI Interface Connectors

The library is equipped with a Low Voltage Differential/Single-Ended (LVD/SE) SCSI interface.

NOTE: If your library is used on a single-ended SCSI bus, the internal wiring length of any rackmounted SCSI system can approach the maximum length specification of a single-ended SCSI bus. You must locate the storage cabinet close to the host computer to avoid excessive bus length. It is also especially important in single-ended systems to use the highest quality SCSI cables. Bus errors caused by excessive length or poor quality cables can significantly degrade performance and reliability.

NOTE: For those two-drive, three-drive and four-drive applications where all tape drives run in SCSI-SE mode (rather than LVD mode), each drive must be connected to its own SCSI bus.

Each of the tape drives in the library and the robotics is a separate SCSI device. When any two or more devices are connected to the same SCSI bus, each separate SCSI device must be assigned a unique SCSI ID. For information on assigning SCSI IDs, see "Configuring the Library," described later in this chapter.

To connect a library to a host system, the host system must have at least one Wide LVD/SE controller and the appropriate driver software.

Interface Cable Specifications

The library is a high-performance system. To avoid degradation of performance, use the highest-quality interface cables from a reputable manufacturer of computer cables. All SCSI cables used with the library should meet the following requirements:

- Shielded or double-shielded, as required to meet EMI specifications
- Impedance match with cable terminators that meet current SCSI specifications
- Characteristic impedance 115ohms
- Host Cable
- Each end of a twisted pair ground connected to chassis ground
- Maximum cable length of 10 ft. (3 m) for a single-ended Fast/Wide SCSI bus, including the internal wiring of SCSI device
- Maximum cable length of 39 ft. (12 m) for an LVD SCSI bus
- Cables of different impedances should not be used together

Additional specifications to assure the highest SCSI performance can be found in the current version of ANSI X3.131.

NOTE: This equipment has been tested for electromagnetic emissions and immunity using good quality shielded cables. If you use unshielded or poor quality cables, or otherwise vary from good practice, you might not comply with national and international rules.

Neo Series 2000 SCSI Configuration

One Tape Drive Single Host System

Figure 2–10 shows a typical SCSI cable configuration for a library with one tape drive (drive 1) installed.

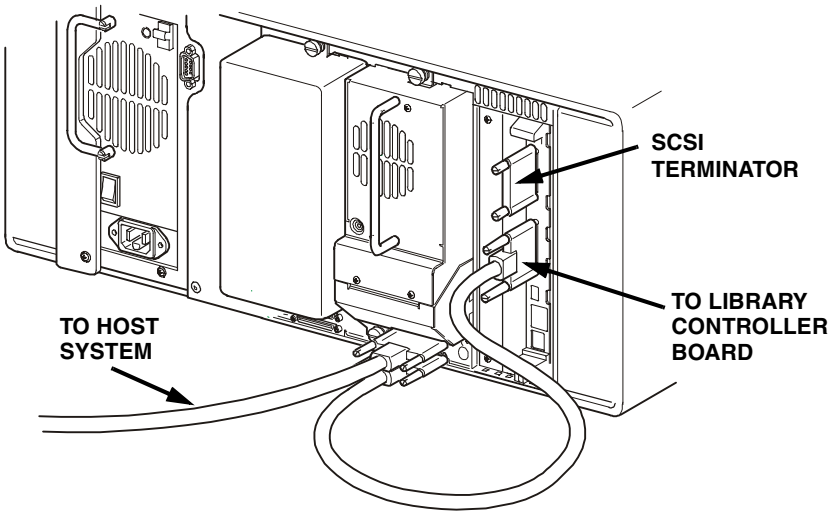


Figure 2–10. One Tape Drive Single Host

Two Tape Drives Single Host System

Figure 2–11 shows a typical SCSI cable configuration for a library with two tape drives installed using a single host system.

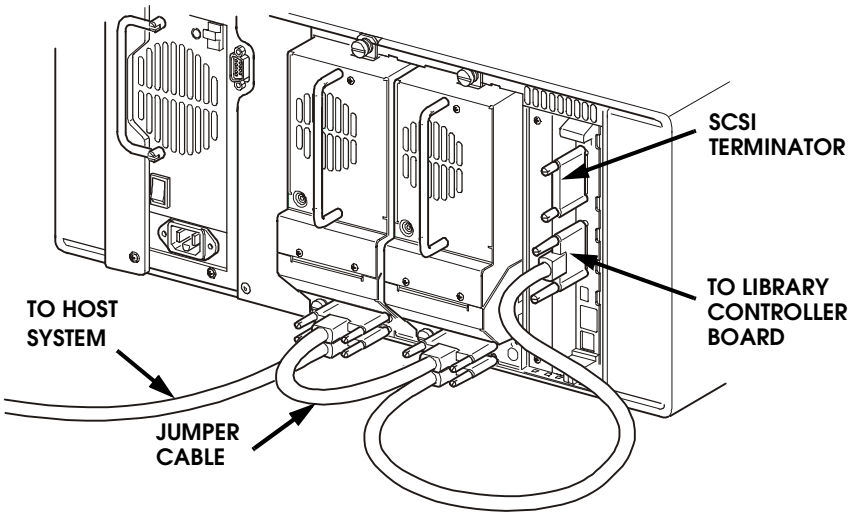


Figure 2–11. Two Tape Drives Single Host

Two Tape Drives Dual Host System

Figure 2–12 shows a typical SCSI cable configuration for a library with two tape drives installed using a dual host system.

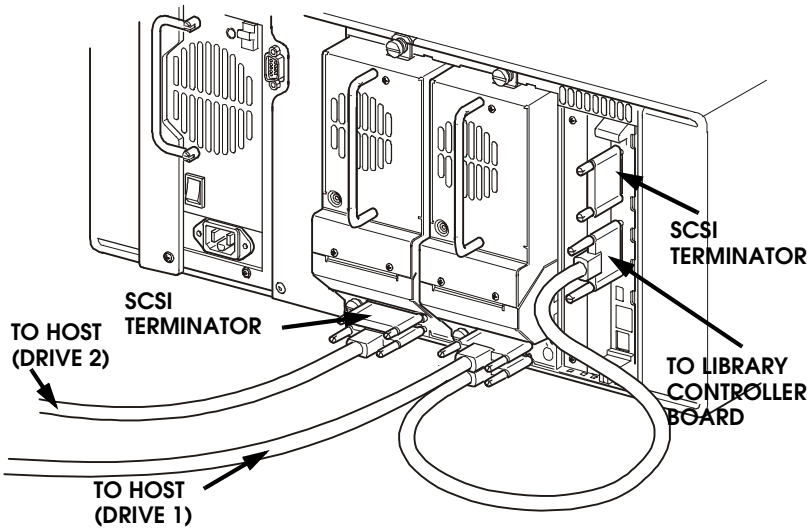


Figure 2–12. Two Tape Drives Dual Hosts

Neo Series 4000 SCSI Configuration

The following configuration examples are provided as an aid to cabling and configuring your Neo library(s).

One Tape Drive Single Host System

Figure 2–13 shows a typical SCSI cable configuration for a library with one tape drive (drive 1) installed.

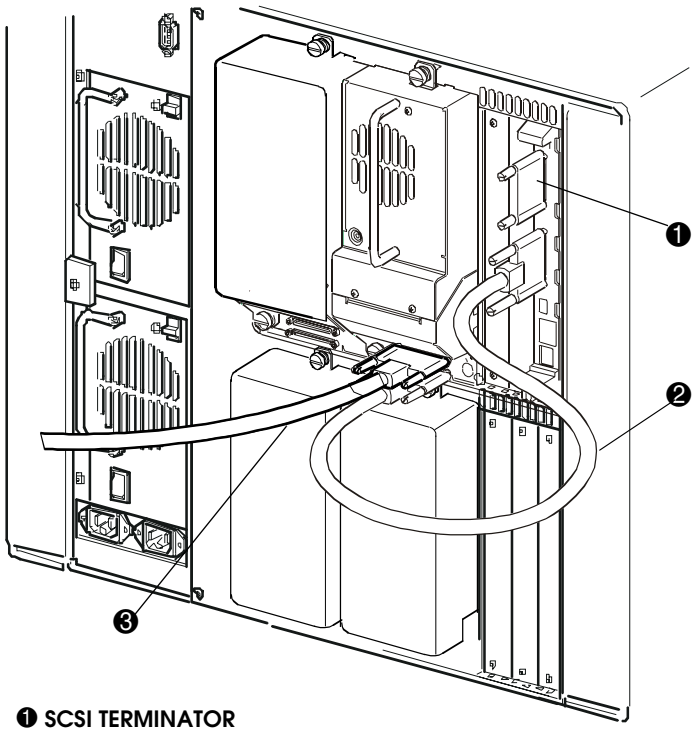
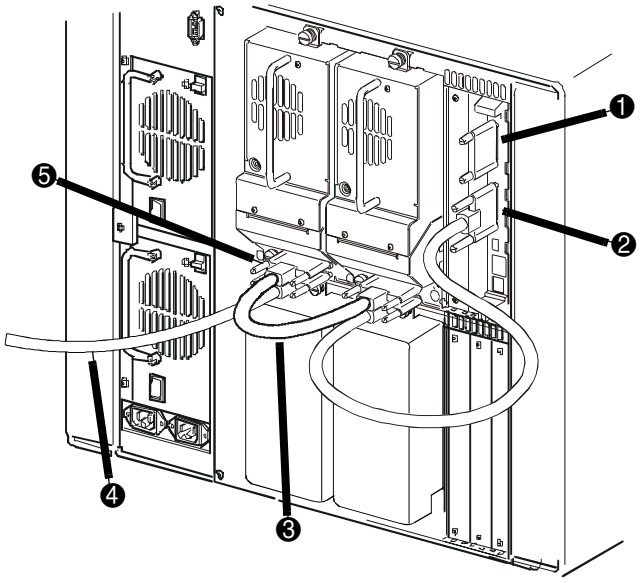


Figure 2–13. One Tape Drive Single Host

Two Tape Drives Single Host System

Figure 2–14 shows a typical SCSI cable configuration for an Neo Series 4000 library with two tape drives installed using a single host system.



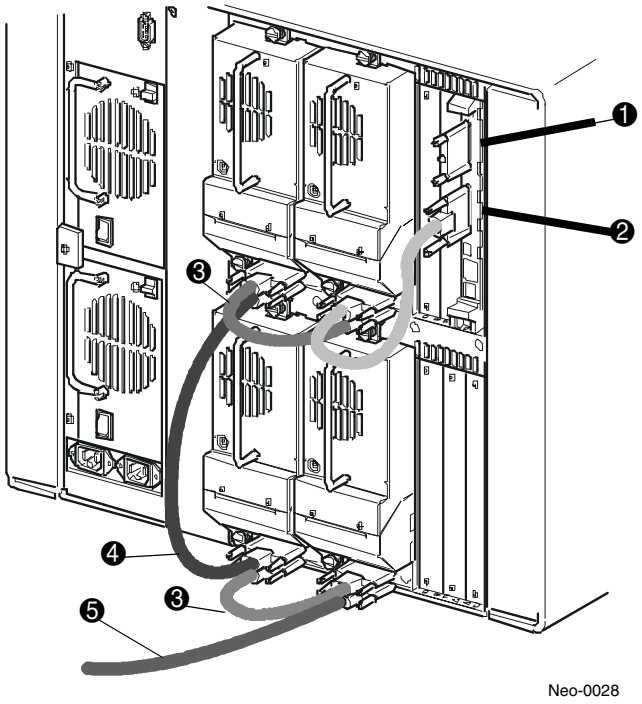
Neo-0028b

❶ SCSI TERMINATOR
❷ TO LIBRARY CONTROLLER CARD
❸ JUMPER CABLE
❹ TO HOST SYSTEM

Figure 2–14. Two Tape Drives Single Host

Four Tape Drives Single Host System

Figure 2–15 shows a typical SCSI cable configuration for a library with four tape drives installed using a single host system.

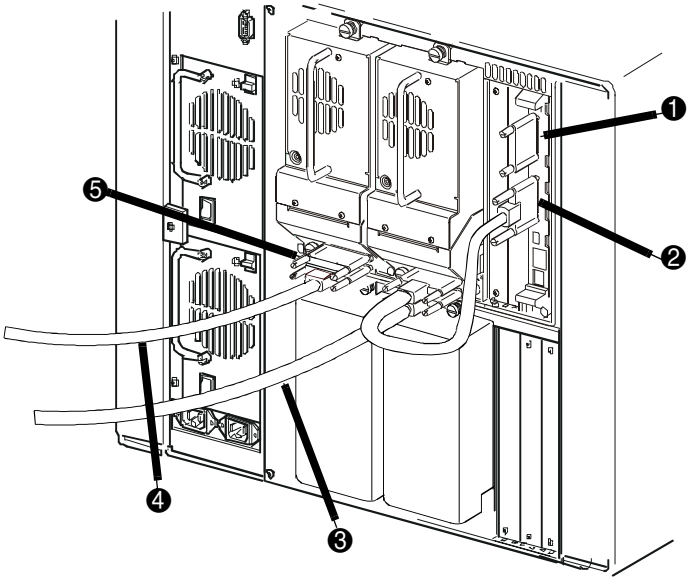


❶ SCSI TERMINATOR
❷ TO LIBRARY CONTROLLER CARD
❸ SHORT JUMPER CABLES
❹ LONG JUMPER CABLE
❺ TO HOST SYSTEM

Figure 2–15. Four Tape Drives Single Host

Two Tape Drives Dual Host System

Figure 2–16 shows a typical SCSI cable configuration for an Neo Series 4000 library with two tape drives installed using a dual host system.

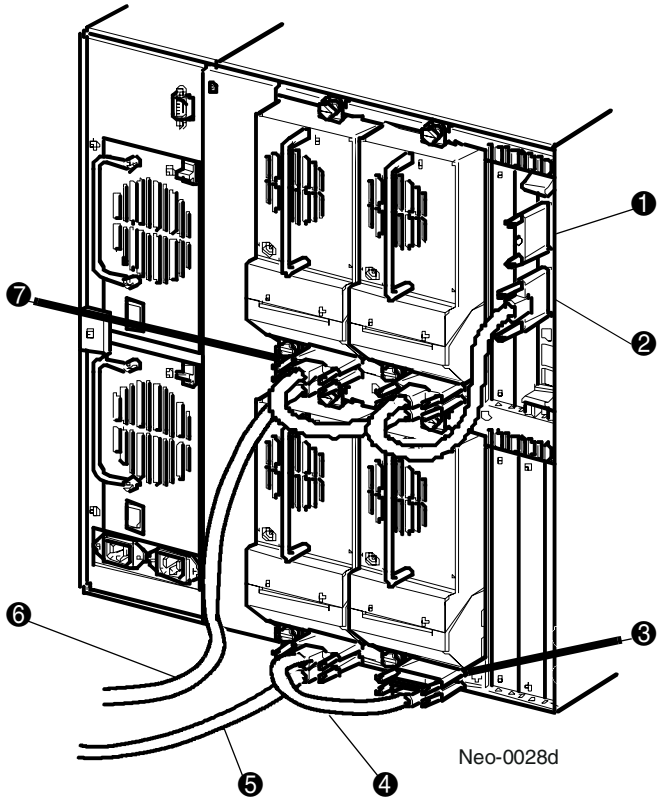


❶ SCSI TERMINATOR
❷ TO LIBRARY CONTROLLER CARD
❸ TO HOST 1 SYSTEM
❹ TO HOST 2 SYSTEM
❺ SCSI TERMINATOR

Figure 2–16. Two Tape Drives Dual Host

Four Tape Drives Dual Host System

Figure 2–17 shows a typical SCSI cable configuration for a library with four tape drives installed using a dual host system.



❶ SCSI TERMINATOR
❷ TO LIBRARY CONTROLLER CARD
❸ SCSI TERMINATOR
❹ JUMPER CABLE
❺ TO HOST 1 SYSTEM
❻ TO HOST 2 SYSTEM
❼ JUMPER CABLE

Figure 2–17. Four Tape Drives Dual Host

Single Host Multi-Unit System

Figure 2–18 shows a typical SCSI cable configuration for a mixed (26/30 and 52/60 slot) multi-unit library with a varying number of drives using a single host system.

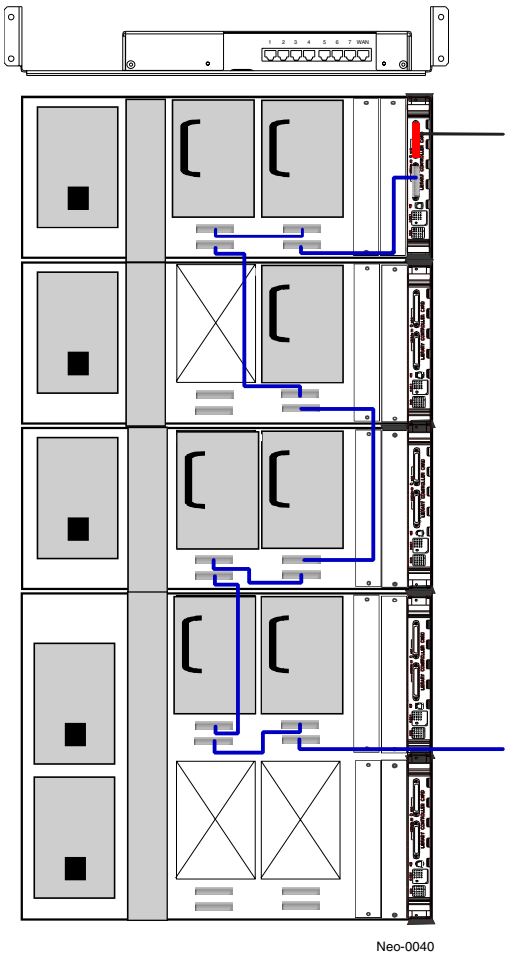


Figure 2–18. Single Host Multi-Unit

Dual Host Multi-Unit System

Figure 2–19 shows a typical SCSI cable configuration for a mixed (26/30 and 52/60 slot) with a varying number of drives multi-unit library using a dual host system.

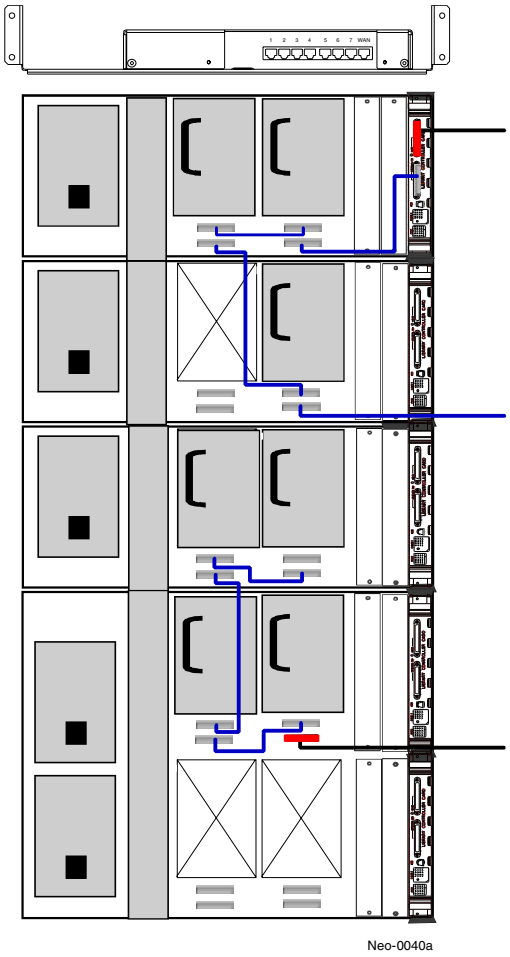


Figure 2–19. Dual Host Multi-Unit

Turning On The Libraries (2000 and 4000)

Use the following instructions to apply power to your library module:

Neo Series 2000

1) Connect the supplied power cord(s) ❶ to AC receptacle located on the back of the library module, see Figure 2–21.

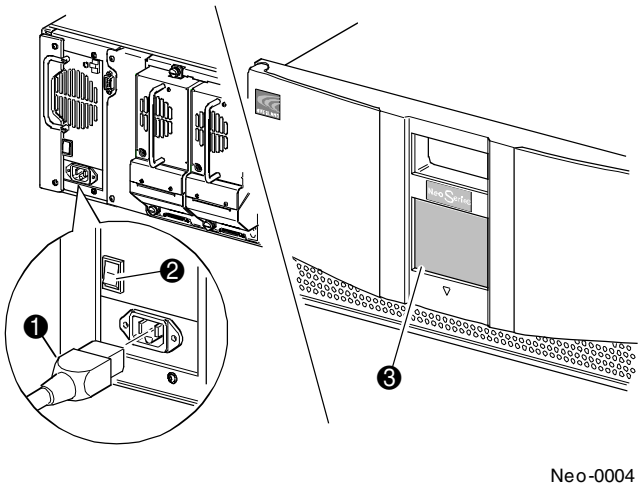


Figure 2–20. Powering The Neo Series 2000 Library Module

2) Toggle the power switch ❷ to on "**I**".

3) Press anywhere on the GUI touch screen ❸ to activate the display and turn the library module on.

Neo Series 4000

1) Connect the supplied power cord(s) ❶ to AC receptacle located on the back of the library module, see Figure 2–21.

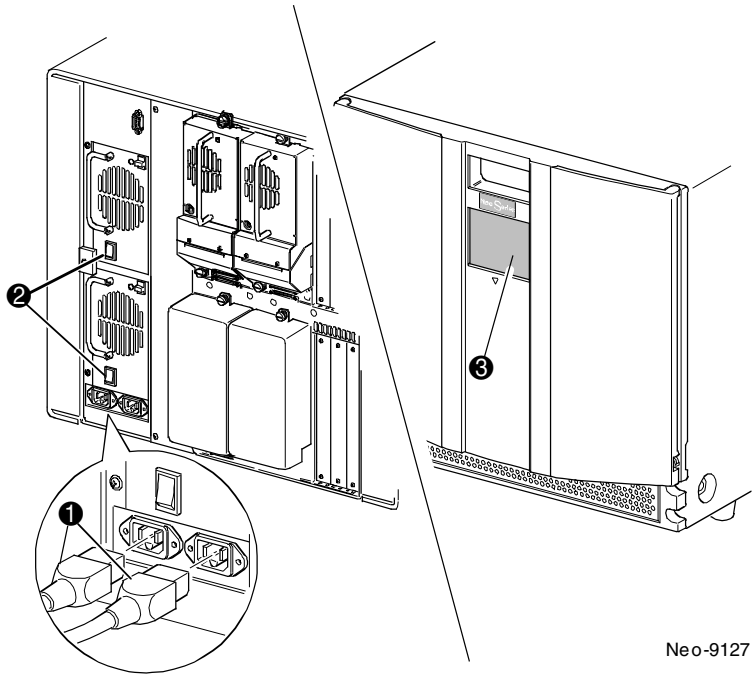


Figure 2–21. Powering The Neo Series 4000 Library Module

2) Toggle each power switch ❷ to on "I".

3) Press anywhere on the GUI touch screen ❸ to activate the display and turn the library module on.

Chapter 3 Library Configuration

Introduction

This chapter explains how to configure the Neo Series Libraries for normal operation. Sections in this chapter include:

- Factory Default Configuration Settings
- Setting a SCSI ID
- Setting Up a Reserved Slot
- Setting Up Your Network

Factory Default Configuration Settings

The below sections list the factory configuration settings for the Neo Series Library Modules. For most applications you do not have to change the factory default settings; however, if you do need to change a configuration setting, use the instructions provided in the following sections. If you are uncertain whether you need to change a setting, contact your authorized service provider.

Configuration settings that are commonly modified include:

- Setting a SCSI ID
- Setting Up a Reserved Slot
- Setting Up Your Network

Configuration settings are modified utilizing the Graphical User Interface (GIU) touch screen. For a complete description of the GUI touch screen operations see Chapter 4, "Operation".

Library Configuration Options

The following options are available from the Edit Options area of the Main menu screen. see Chapter 4, "Operation" and refer to Table 4–2 for option descriptions and defaults.

SCSI Configuration Options

The following options are available from the Edit Options area of the Main menu screen.

Table 3–1 Neo Series SCSI Configuration Options

Definition	Option and Default Description	Neo Series 2000 Default Value	Neo Series 4000 Default Value
Drive n Bus ID	Lets you set the SCSI addresses of the drives. The designators Drive 1 (outer tape drive) through Drive n refer to the first through nth drives. (One Based default)	Drive 1 = 1 Drive 2 = 2	Drive 1 = 1 Drive 2 = 2 Drive 3 = 3 Drive 4 = 4
Library SCSI Bus ID	Lets you set the SCSI addresses for the library robotics.	6	6
Library SCSI Bus Parity	Lets you enable or disable the library robotics SCSI bus parity checking.	Enabled	Enabled
SCSI Mode	Defines the loader as SCSI-2 or SCSI-3.	SCSI-3	SCSI-3
Unit Attention Reporting	Lets you select reporting of All or only One stacked-unit attention conditions. If set to All, the unit reports all unit attention conditions in sequence; if set to One, the unit reports only the highest priority condition.	Report All	Report All
Init Element Status	Lets you specify the library's response to the SCSI INITIALIZE ELEMENT STATUS command. The possible settings are No Inventory, Force Inventory, and Force Label Scan.	No Inventory	No Inventory
Test Unit Ready Reporting	Lets you specify the response to a TEST UNIT READY command if the library is in Sequential Mode. The possible settings are Standard or Custom. Standard returns check condition not ready and Custom returns Good Status.	Standard	Standard
Device Capability Page Length	: Lets you choose between two lengths of the mode sense/select device capabilities page (SCSI page 1Fh), which are short (14 bytes) and long (18 bytes), to accommodate different SCSI device implementations of this page.	Short (14 bytes)	Short (14 bytes)
Transport Element Base Address	Lets you set the base address for the robotics mechanism.	0	0
Storage Element Base Address	Lets you set the base address for the magazine slots. The default is.	20	20
Transfer Element Base Address	Lets you set the base address for the tape drives.	1E0	1E0
Import/Export Element Base Address	Lets you set the base address for the mail slot.	1C0	1C0
Product Identification	Lets you specify the response of the library's robotics to the SCSI INQUIRY command in the Product ID fields.	NEO Series	NEO Series

Table 3–1 Neo Series SCSI Configuration Options (Continued)

Definition	Option and Default Description	Neo Series 2000 Default Value	Neo Series 4000 Default Value
Vendor Identification	Lets you specify the response of the library's robotics to the SCSI INQUIRY command in the Vendor ID field.	OVERLAND	OVERLAND
Post Recovered Errors	Lets you enable or disable the post recovered errors.	Disabled	Disabled
TapeAlert Mode	Specifies conditions for logging and reporting the following Tape Alert data options: **Logging Disabled:** Inhibits the logging feature. **No Exceptions:** The library must not report information exceptions. **Generate Unit Attention:** Reports information exceptions with a Unit Attention sense key and an ASC/ASCQ of 5D/00. **Conditionally Generate Recovered Error:** Reports information exceptions with a Recovered Error sense key and an ASC/ASCQ of 5D/00, if Recovered Error Reporting is enabled. **Unconditionally Generate Recovered Error:** Unconditionally reports information exceptions with a Recovered Error sense key and an ASC/ASCQ of 5D/00. **Generate No Sense:** Reports information exceptions with a No Sense sense key and an ASC/ASCQ of 5D/00. **Report on Unsolicited Request Sense:** Reports information exceptions with a No Sense sense key and an ASC/ASCQ of 5D/00, only in response to an unsolicited REQUEST SENSE command.	Logging Disabled	Logging Disabled
Abort Move Status	Lets you specify the SCSI response while aborting a SCSI command. The possible settings are Busy or Not Ready.	Busy	Busy
Door Open Response	Lets you specify the SCSI response when a library door is open. The settings are Ready or Not Ready.	Not Ready	Not Ready
Initiate Wide Data Transfer Negotiation	Lets you enable the library to initiate a SCSI synchronous and wide data transfer negotiation with the host. The settings are Do Not Initiate or Initiate.	Initiate	Initiate
Data Speed Transfer	Lets you set the SCSI data transfer rate to Synchronous, 10 MB/sec, 5 MB/sec or Asynchronous Only.	Synchronous, 10 MB/sec	Synchronous, 10 MB/sec

Network/WebTLC Configuration Options

The following options are available from the Edit Options area of the Main menu screen. Contact your network administrator for valid selections for these options

Table 3–2 Network/WebTLC Configuration Options

Definition	Option and Default Description	Neo Series 2000 Default Value	Neo Series 4000 Default Value
IP Address Determination	Lets you set the way an IP address is determined. The possible choices are: Obtain An IP Address From a DHCP Server and User Specified IP Address.	Obtain An IP Address From a DHCP Server	Obtain An IP Address From a DHCP Server
Private IP Base Address	**Note:** Master configurations only; ignored otherwise.	192.168.1.1	192.168.1.1
Private IP Subnet	**Note:** Master configurations only; ignored otherwise.	255.255.255.0	255.255.255.0
Private IP Gateway	**Note:** Master configurations only; ignored otherwise.	192.168.1.1	192.168.1.1

Configuring the Library

The library provides several configuration options to support a variety of applications and platforms. The settings for each of the available options are stored in non-volatile memory in the library. For most applications, you do not have to change the factory default settings; however, if you do need to change the configuration, use the instructions provided in the following sections. If you are uncertain whether you need to change a setting, contact your authorized service provider.

Changing Settings

You can change configuration settings using the Graphical User Interface (GUI) touch screen. For a complete description of GUI touch screen operation, see Chapter 4, "Operation"

Setting a SCSI ID

Each tape drive installed in the library requires a unique SCSI ID. The information provided in this section instructs you how to set a SCSI ID.

To set a SCSI ID:

1) Turn the library on and wait until the Power-On Self Test (POST) completes and the library default screen on the display, see Figure 3–1.

Figure 3–1. Library Default Screen

2) Select the Menu option from the Status screen.

3) Enter the appropriate password, required. See the section on "Front Panel and Media Locks" in Chapter 4 for instructions on how to set passwords.

4) Select SCSI in the Edit Options area to display the following screen, see Figure 3–2.

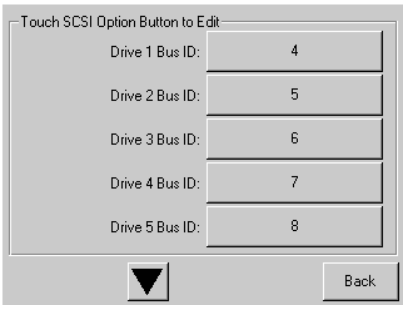


Figure 3–2. SCSI Option Selection Screen

NOTE: You can move to the next sequential SCSI options screen by selecting the ▼. To return to the previous SCSI options screen select the ◢ or **Back** button to return to the Menu screen.

5) For example, to set the Drive 1 Bus ID to 3:

a. Select the box next to the text "Drive 1 Bus ID:." The Drive 1 Bus ID screen appears on the display, see Figure 3–3. This screen displays the current Drive 1 Bus ID along with the new value that you request.

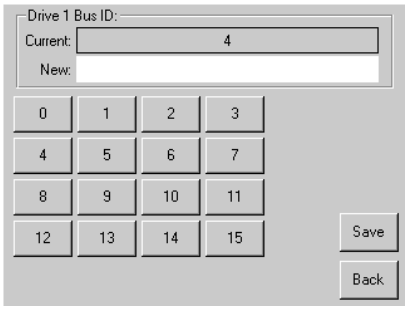


Figure 3–3. Drive 1 Bus ID Screen

b.Touch the block that contains the number 3. This places your request into the New data field.

c.Touch the Save option to confirm your request. A confirmation screen appears on the display, see Figure 3–4.

Drive 1 Bus ID:
Confirm
Press OK to save new option.
NOTE: Option change is effective immediately after saving.
Press Cancel to skip saving the new option.
OK
Cancel

Figure 3–4. SCSI ID Confirmation Screen

d.Select OK to confirm. The newly selected SCSI ID flashes for a few seconds while the drive is being updated, then remains solid indicating that the operation is complete, see Figure 3–5.

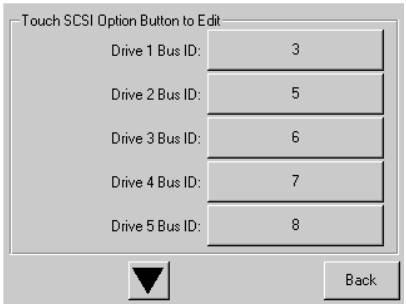


Figure 3–5. Drive 1 Bus 3 Data Field Screen

5) Press the **Back** button repeatedly to return to the Main menu screen.

6) Repeat this procedure to set any remaining SCSI IDs.

Setting up Reserved Slots

Use this option to remove some of the tape cartridge slots in the library from use as storage slots to meet licensing requirements or to dedicate one or more tape cartridge slots as a cleaning slot.

How Reserved Slots are Numbered

Standard tape cartridge slots are numbered from the front of the magazine to the rear, see Figure 3–6 and Figure 3–7. If you reserve one slot, it becomes Reserved Slot #1 in the last slot of the magazine. Additional reserved slots continue in this rear-to-front pattern. If your software license limits you to less than the full magazine capacity, Reserved Slot #1 always follows the last unreserved data tape cartridge.

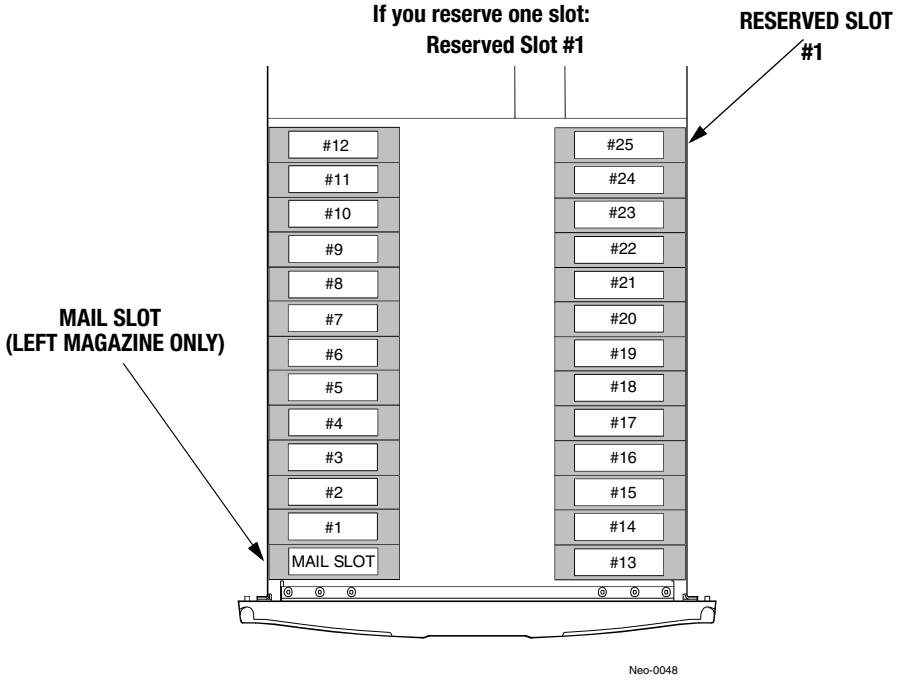


Figure 3–6. Neo Series 2000 Slot Numbering

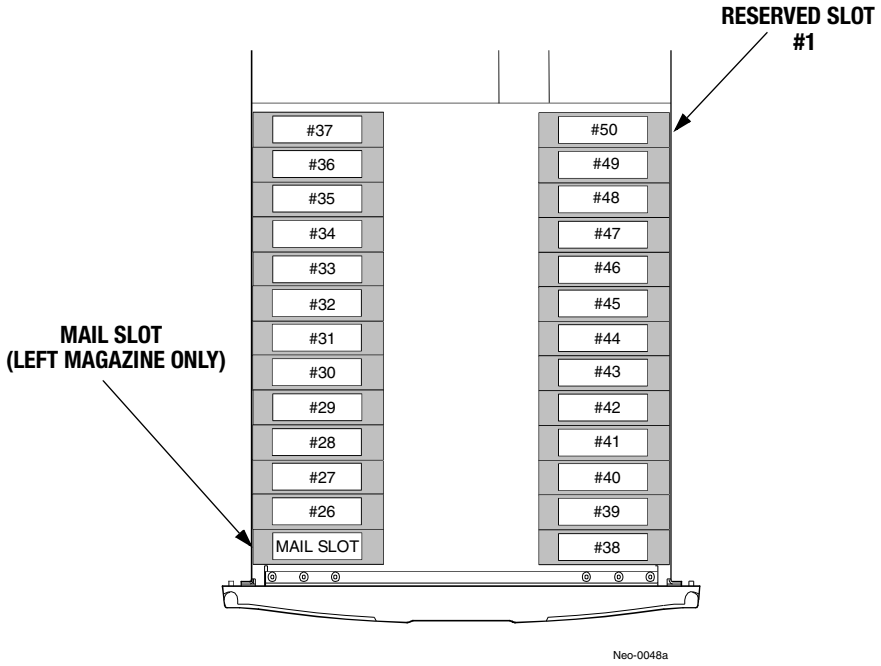


Figure 3–7. Neo Series 4000 Slot Numbering (Lower Mags)

To reserve a slot:

1) From the Menu screen, touch the Library option from the Edit Options area.
2) From the Library options screen, press the ▼to scroll to the screen that contains the Total Reserved Slots option, see Figure 3–8.

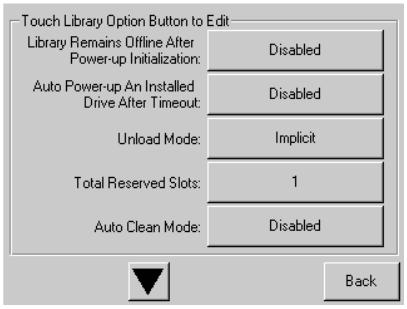


Figure 3–8. Total Reserved Slots Screen

3) Press the associated box next to the Total Reserved Slots option. A numeric keypad appears on the display, see Figure 3–9.

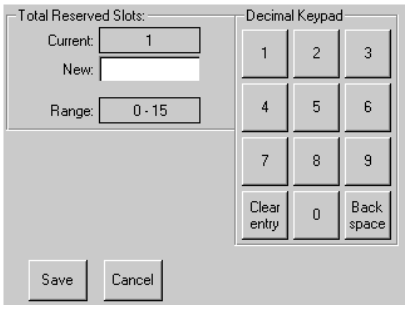


Figure 3–9. Reserved Slots Numeric Keypad

4) Enter either new value and then press Save to confirm your change. A confirmation screen appears on the display, see Figure 3–10.

Total Reserved Slots:
Decimal Keypad
Confirm
Press OK to save new option.
WARNING: Option change causes library to be immediately rebooted after saving.
Press Cancel to skip saving the new option.
OK
Cancel

Figure 3–10. Total Reserved Slots Confirmation Screen

5) Press the **Back** button repeatedly to return to the Main menu screen. Your choice takes effect the next time you boot the library.

Chapter 4 Operation

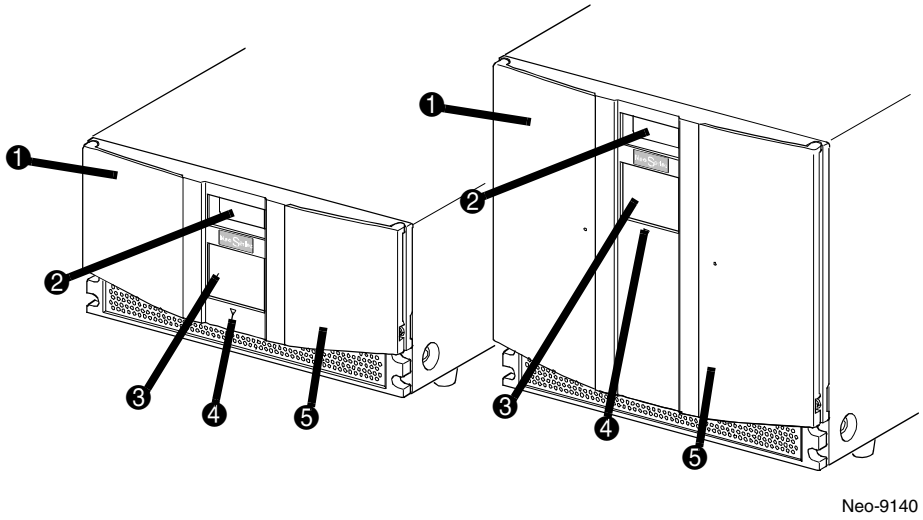
Introduction

This chapter describes how to operate the Overland Storage Neo Series Libraries. Sections in this chapter include:

- Front panel
- Turning the library on
- Library display screens and options
- Inserting and removing tape cartridges

Front Panel

The front panel of the libraries include the left and right magazine doors, a Graphical User Interface (GUI) touch screen, a library status LED, and a viewing window, see Figure 4–1.



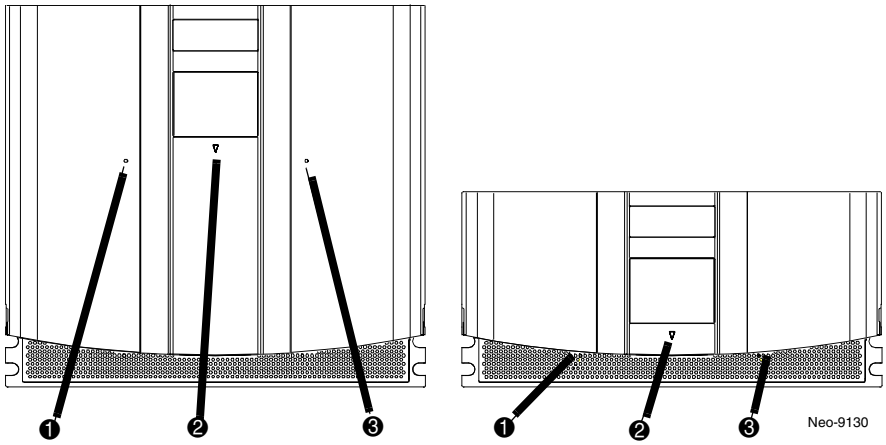
❶ Left Magazine Door
❷ Viewing Window
❸ GUI Touch Screen
❹ Library Status LED
❺ Right Magazine Door

Figure 4–1. Library Front Panel

Magazine Doors

The magazine doors have both an electrical release (via the GUI touch screen) and a manual release. It is always recommended that you open the magazine doors using the GUI touch screen. However, should the GUI touch screen fail, you can manually open them by pushing a paper clip into the mechanical releases at the center of each door (Neo Series 4000), see Figure 4–2.

CAUTION: The magazine doors must only be opened manually in an emergency. Failure to do so may cause data loss and equipment damage.



❶ Left Magazine Door Release
❷ Library Status LED
❸ Right Magazine Door Release

Figure 4–2. Magazine Door Mechanical Release

Indicators

The library front panel indicators consist of a GUI touch screen and a library status LED (see Figure 4–3).

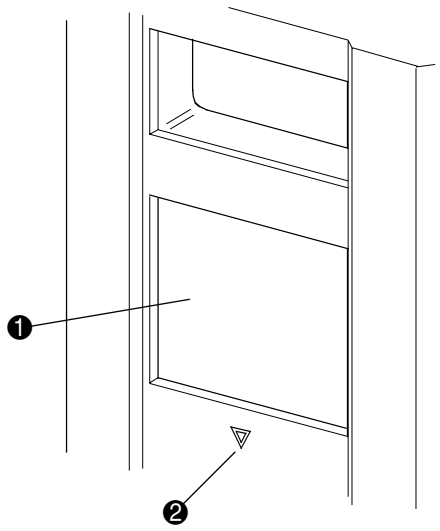


Figure 4–3. Library Indicators

Table 4–1 Library Front Panel Indicators

Indicator	Description
Solid Green	The Library is operating correctly under normal conditions.
Flashing Green	The Library is operating correctly,; however, a change is being made via the GUI touch screen that interrupts the current library operation.
Solid Amber	The library is in a fault state as indicated by the fault message on the GUI touch screen.

Turning On The Libraries

Use the following instructions to apply power to your library module:

Neo Series 2000

1) Connect the supplied power cord(s) ❶ to AC receptacle located on the back of the library module, see Figure 4–4.

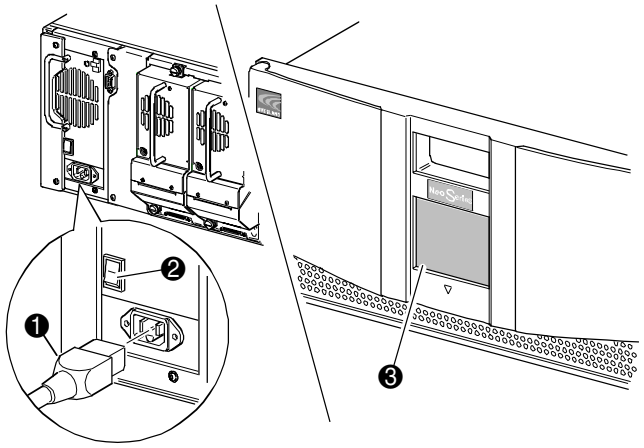


Figure 4–4. Powering The Neo Series 2000 Library Module

2) Toggle the power switch ❷ to on “I”.

3) Press anywhere on the GUI touch screen ❸ to activate the display and turn the library module on.

Neo Series 4000

1) Connect the supplied power cord(s) ❶ to AC receptacle located on the back of the library module, see Figure 4–5.

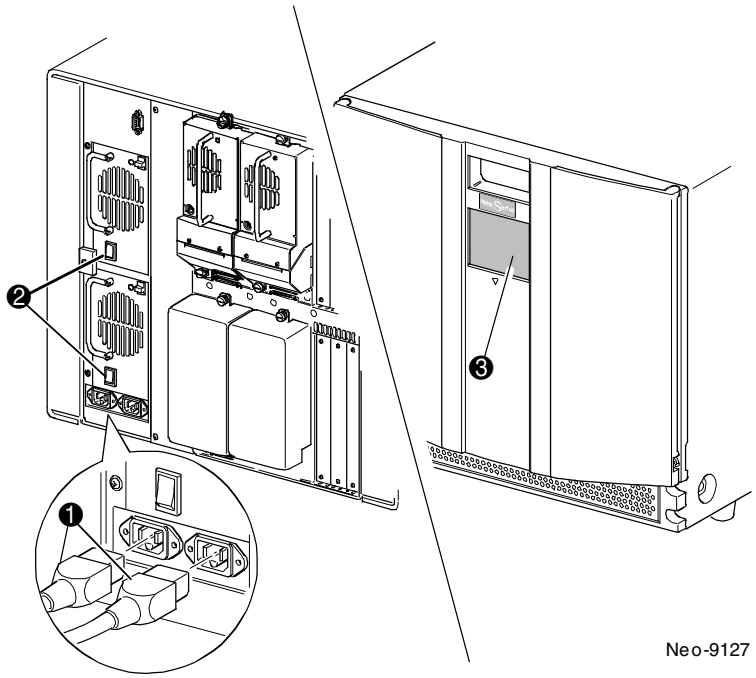


Figure 4–5. Powering The Neo Series 4000 Library Module

2) Toggle each power switch ❷ to on "I".
3) Press anywhere on the GUI touch screen ❸ to activate the display and turn the library module on.

Initialization Screen

When power is first applied to the libraries, a series of Power-On Self Test (POST) diagnostics are performed. After the POST completes, the following initialization screen appears:

Figure 4–6. Initialization Screen

NOTE: Pressing "Continue" will display the library default screen, see "Library Default Screen".

Library Default Screen

After the POST executes successfully and the library initialization completes, the Library Default Screen, Figure 4–7 appears:

Figure 4–7. Library Default Screen

The Library Default Screen enables you select the following options:

- Technical Support Information
- Mail Slot Access
- Magazine Access
- Move Media
- LCD Contrast Controls
- Power
- Status
- Online
- Menu

Front Panel and Media Security Locks

The following security features are available to avoid accidental interruption of library operation. To navigate to this option press Menu, and press Passwords under the Edit Options column.

Passwords Screen

The Passwords screen offers three levels of security, see Figure 4–8.

- User Level 1 - lowest level, allows access to the mail slot
- User Level 2 - allows magazine access and lets you move media
- Service - highest level, allows access to the Menu that lets you view/edit library and SCSI options

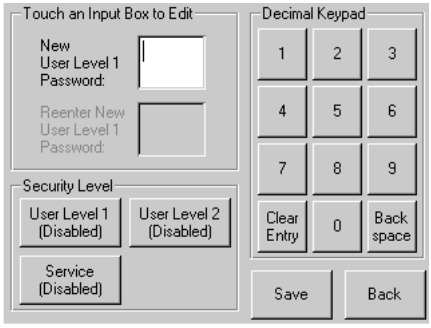


Figure 4–8. Library Password Levels

Each password is represented by four decimal digits that are stored in NVRAM (non-volatile memory) in a range of 0001 to 9999. Note that 0000 is used to disable password verification for that level.

Enabling a password causes all disabled higher levels to also be enabled to that value. As a result, prior to accessing a higher level operation, you are prompted first to enter the higher level password. This method prevents someone from entering an unprotected Menu mode and changing the lower-level password to defeat it.

You can also use a higher level password to gain access to a lower level operation. For example, use the Service password to access the Move Media operation. Using the Service password to access the Menu option also gives full access (without validating) to the Service operations.

Host System

Media can also be locked by software running on the host. The library provides no GUI touch screen override for this command. Usually, exiting the host software restores media access. In the event of host failure, you can restore media access by cycling the library power. Procedures for locking and unlocking magazine doors and media are described later in this chapter.

Library Display Screens and Options

The library GUI touch screen displays graphics and text in the form of easy-to-understand messages. Graphics and text messages, along with their functions, are described in this section.

Technical Support Information Option

Selecting the Overland logo in the top left corner of the option lets you display Overland-specific technical support assistance information, see Figure 4–9. If you are having difficulty with a direct connection, instructions on how to contact your local service provider is included, along with a toll free number to contact Overland Storage directly. For further assistance, you can also access Overland's website at www.overlandstorage.com.

Figure 4–9. Technical Support Information Screen

Access Mail Slot Option (Left Magazine Only)

Selecting this option lets you display the Mail Slot Access screen (Figure 4–10). This option lets you gain access to the mail slot without taking the library offline. Simply select the mail slot you wish to open, the locked icon will change to unlocked and the left side door of the selected library will open.

Note that the mail slot is reserved for the first tape cartridge slot in the left magazine(s) and can be password protected.

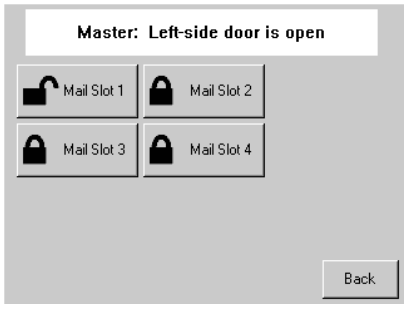


Figure 4–10. Access Mail Slot Screen

NOTE: In a scaled multi-module library system (Figure 4–10), depressing the Mail Slot Access button on the Master GUI displays the mail slots of all libraries in the stack. This is the only method to access to the mailslots of the other libraries.

Access Magazine Option

Selecting this option lets you display the Access Magazine screen (Figure 4–11). The Access Magazine option lets you gain access to the left magazine, right magazine, or both magazine doors for tape cartridge placement or removal. Access is gained by selecting the library you wish to access and then selecting left, right, or both, the lock icon(s) will change to unlocked and the door(s) of the selected library will open.

Note that this option may also be password protected.

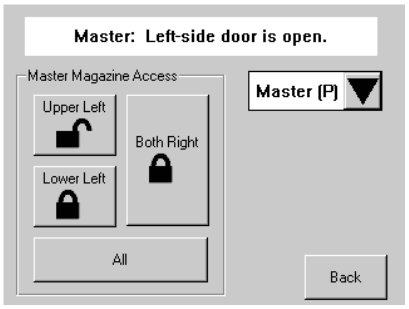


Figure 4–11. Access Magazine Screen

NOTE: In a scaled multi-module library system (Figure 4–11), depressing the Magazine Access button on the Master GUI is the only method to access the left and right magazines of all libraries in the stack.

Move Media

Selecting this option lets you display the Move Media screen, see Figure 4–12. The Move Media option lets you remove a cartridge from a tape drive, to load a cartridge to a tape drive or to move cartridges within the library.

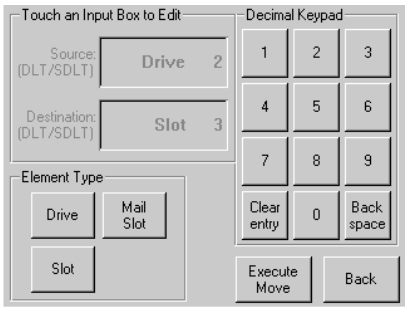


Figure 4–12. Move Media Screen

The following illustrates moving a cartridge from Drive 2 to Slot 7:

1) Touch the Source Input Box or Element Type from the Move Media screen. The Source Input Box will change from gray to an active state Figure 4–13.

2) Touch the source you want to move, from the Source Element Type selections. The options available are *Drive*, *Mail Slot* and *Slot*, **Drive 2** is used for this example.

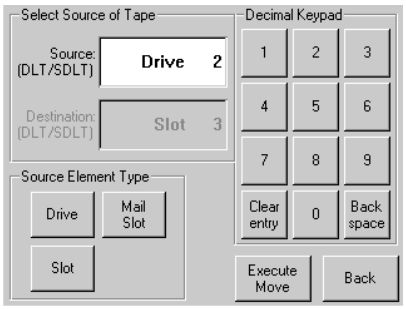


Figure 4–13. Move Media Screen (Source)

3) Touch the Destination Input Box on the Move Media Screen. The Destination Input Box will change from gray to an active state Figure 4–14.

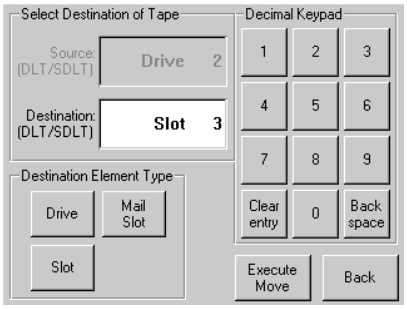


Figure 4–14. Move Media Screen (Destination)

4) Touch the destination option you want to move media to from the Destination Element Type selections. The options available are *Drive*, *Mail Slot* and *Slot*. Repeat selecting the desired destination option until the desired option is displayed in the Destination Input Box, for example, touching Slot three times displays **Slot 3** in the Destination Input Box, Figure 4–14.

5) Touch the "*Execute Move*" button. The library robotics move the cartridge from **Drive 2** to **Slot 3**.

LCD Contrast Controls

Selecting these options let you increase or decrease the contrast of the LCD display. Incremental steps are set by adjusting the LCD contrast controls (up and down arrows) from the upper right corner of the Library Default Screen, (Figure 4–7). Incremental steps can range from 0 to 31 depending on your preference.

Power

Selecting this option initiates a library power-down operation (Figure 4–15).

NOTE: The library moves the shuttle assembly to the parked position before powering down.

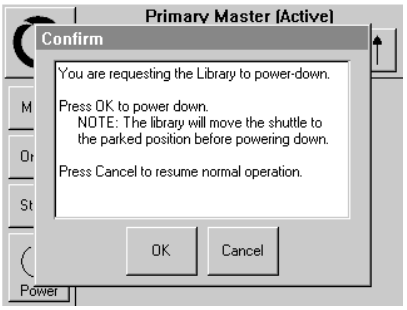

Primary Master (Active)
Confirm
You are requesting the Library to power-down.
Press OK to power down.
NOTE: The library will move the shuttle to the parked position before powering down.
Press Cancel to resume normal operation.
OK
Cancel
Power

Figure 4–15. Power Down Initiation Screen

Status

Selecting this option lets you display the Library Status screen (Figure 4–16). You can identify a tape drive type, view physical tape drive status, tape drive cleaning information, and tape cartridge information by opening the corresponding areas on the screen.

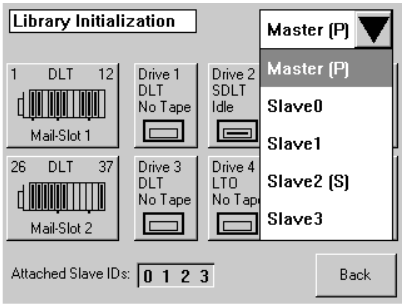


Figure 4–16. Neo Series Status Screen

Online

Selecting this option from the Library Default Screen, (Figure 4–7), lets you place the library online or offline.

NOTE: By default the library automatically comes online after a power-up initialization.

Menu Selections

Selecting Menu on the Library Default Screen lets you view, configure, and use the library (Figure 4–17). The Menu option displays three distinct areas:

- View System Data
- Utilities
- Edit Options

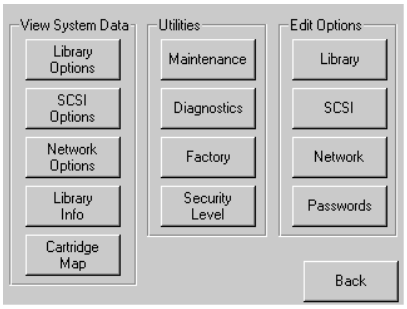


Figure 4–17. Menu Screen

View System Data

The View System Data area lets you select the following screens:

- Library Options
- SCSI Options
- Network Options
- Library Info
- Cartridge Map

Library Options

Selecting this option lets you view but not modify the library settings as defined in the Library option of the Edit Options area, Figure 4–18. Tables 4-2 and 4-3 describe the available options.

NOTE: You can view the next sequential Library Options screen by selecting the ▼. To return to the previous Library Options screen select the ▲or **Back** button to return to the Menu screen.

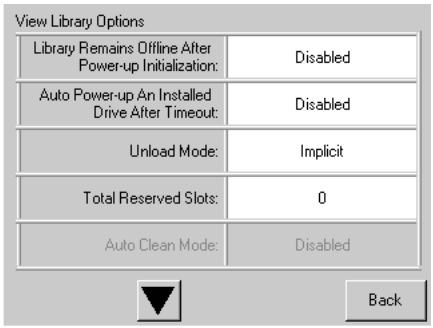


Figure 4–18. View Library Options Screen (Initial Screen)

Table 4–2 below, lists and describes the available Library options:

Table 4–2 View Library Options

Option	Description
Library Stays Offline After Power-up Initialization	Library does not go online after power-up initialization. You must select the Online option from the Menu screen on the GUI touch screen. The default is Disabled.
Auto Power-up an Installed Drive	Enables a tape drive to be automatically powered up (after a delay), after replacing a tape drive.

Table 4–2 View Library Options (Continued)

Option	Description
Unload Mode	Selects the unload mode for library tape drives. If Implicit, the library unloads a tape drive before attempting to move a cartridge from that tape drive. If Explicit, the host must issue a SCSI UNLOAD command to a tape drive before each MOVE MEDIUM command that removes a cartridge from that tape drive. The default is Implicit.
Total Reserved Slots	Lets you remove from use a specified number of slots at the rear of the magazine. Some host software imposes size limits on library magazines for licensing purposes, and does not operate with a library that exceeds the licensed size. The default is 0.
Auto Clean Mode	Lets you enable an automatic cleaning cycle. To use this option, you must have reserved a slot for a cleaning cartridge using the Total Reserved Slots option. The default is Disabled.
Drive and Slot Numbering	Lets you specify whether SCSI elements in the library displays with either zero-based or one-based. This only affects the GUI touch screen, not the actual SCSI element addresses. The default is one based.
Library Mode	Lets you set the robotics operating mode to Random or Sequential The default is Random.
Sequential Mode	Lets you select a normal or recirculate frequency mode. The default is Normal. (*Only available if Library Mode is set to Sequential)
LCD Contrast Adjust	The LCD contrast controls let you increase or decrease the contrast of the LCD display. The incremental steps are set by adjusting the LCD Contrast Adjust option from the Library option. Incremental steps can range from 0 to 31 depending on your preference.
Mail Slot Mode	Lets you enable the mail slots in a library. The default is Mail Slot Enabled (Neo Series 2000), or Both Mail Slots Enabled (Neo Series 4000).
Barcode Label Size	Lets you limit the maximum number of characters of the bar code label. Possible settings are 1 through 8. The default is 8.
Barcode Label Alignment	Lets you specify the alignment of a bar code label. The options are Left or Right. When used in conjunction with the label size option, this option strips unwanted trailing characters (left alignment) or leading characters (right alignment). The default is Left Align.
Barcode Label Check Digit	Lets you specify whether to enable or disable the verification of a check digit character in the barcode label. The default is Disabled.
Barcode Reader	Lets you specify whether the barcode reader will retry reading barcode labels. The default is Retries Enabled.

Table 4–2 View Library Options (Continued)

Option	Description
Module Configuration	Lets you specify the Library Module Configuration. Three options are available: • **Standalone** - Used when the library contains a single module. • **Master** - Used to select the module which controls the elevator assembly in a multi-module library. • **Slave** - Used to select the other modules in a multi-module library.

SCSI Options

Selecting this option lets you view the settings defined from the SCSI option in the Edit Options area (Figure 4–19).

NOTE: You can move to the next sequential SCSI Options screen by selecting the ▼. To return to the previous SCSI Options screen select the ▲or **Back** button to return to the Menu screen.

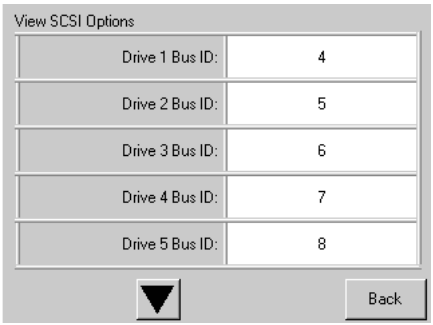


Figure 4–19. View SCSI Options Screen (Initial Screen)

Table 4–3 lists and describes the available selections.

Table 4–3 View SCSI Options

Option	Description
Drive *n* Bus ID	Lets you set the SCSI addresses of the drives. The designators Drive 1 (outer tape drive) through Drive *n* refer to the first through *n*th drives, counting from right to left (looking from the rear of the module) starting with the top module in the library module system.
Library SCSI Bus ID	Lets you set the SCSI address for the library robotics. The default is 6.

Table 4–3 View SCSI Options (Continued)

Option	Description
Library SCSI Bus Parity	Lets you enable or disable the library robotics SCSI bus parity checking. The default is Library SCSI Bus Parity Enabled.
SCSI Mode	Enables the capabilities of SCSI-3 commands. The default is SCSI-3.
Unit Attention Reporting	Lets you select reporting of All or only One stacked Unit attention conditions. If set to All, the unit reports all Unit Attention conditions in sequence; if set to One, the unit reports only the highest priority condition. The default is Report All.
Init Element Status	Lets you specify the library's response to the SCSI INITIALIZE ELEMENT STATUS command. The possible settings are No Inventory, Force Inventory, and Force Label Scan. The default is No Inventory.
Test Unit Ready Reporting	Lets you specify the response to a TEST UNIT READY command if the library is in Sequential Mode. The possible settings are Check Condition-Not Ready or Good Status. The default is Check Condition - Not Ready.
Device Capability Page Length	Lets you choose between two lengths of the Mode Sense/Select device capabilities page (SCSI page 1Fh), which are short (14 bytes) and long (18 bytes), to accommodate different SCSI device implementations of this page. The default is Short (14 bytes).
Transport Element Base Address	Lets you set the base address for the robotics mechanism. The default is 0.
Storage Element Base Address	Lets you set the base address for the magazine slots. The default is 20.
Transfer Element Base Address	Lets you set the base address for the tape drives. The default is 1e0.
Import/Export Element Base Address	Lets you set the base address for the mail slots. The default is 1c0.
Product Identification	Lets you specify the response of the library's robotics to the SCSI INQUIRY command in the Product ID fields. The default is "NEO Series."
Vendor Identification	Lets you specify the response of the library's robotics to the SCSI INQUIRY command in the Vendor ID field. The default is "Overland".
Post Recovered Errors	The default is "Disabled"
TapeAlert Mode	Specifies conditions for logging and reporting Tape Alert data. The default is Logging Disabled.
Abort Move Status	Lets you specify the SCSI response while aborting a SCSI command. The possible settings are Busy or Not Ready. The default is Busy.

Table 4–3 View SCSI Options (Continued)

Option	Description
Door Open Response	Lets you specify the SCSI response when a library door is open. The settings are Ready or Not Ready. The default is Not Ready.
Initiate Wide Data Transfer Negotiation	Lets you enable the library to initiate a SCSI synchronous and wide data transfer negotiation with the host. The settings are Do Not Initiate or Initiate. The default is Initiate.
Data Transfer Speed	Lets you set the SCSI data transfer rate to Synchronous, 10 MB/sec, 5 MB/sec or Asynchronous Only. The default is Synchronous, 10 MB/s.

Network Options

Selecting this option lets you view the settings defined in the Network option in the Edit Options area (Figure 4–20). Table 4–4 lists and describes view options.

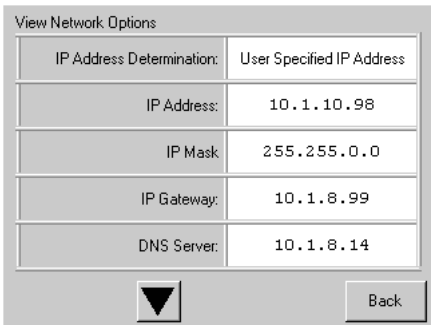


Figure 4–20. View Network Options Screen

Table 4–4 View Network Options

Option	Description
IP Address Determination	Lets you set the way an IP address is determined. The possible choices are: Obtain An IP Address From a DHCP Server and User Specified IP Address. The default is Obtain An IP Address From a DHCP Server.
IP Address	Enter a valid IP address using the numeric keypad.
IP Mask	Enter a valid Subnet Mask address using the numeric keypad.
IP Gateway	Enter a valid Gateway IP address using the numeric keypad.
DNS Server	Enter a valid DJNS IP address using the numeric keypad.
* These options are only valid if the IP Address Determination Option is set to "User Specified IP Address".	

Library Info

Selecting this option lets you display the Miscellaneous Library Info screen (Figure 4–21). This screen displays the library's firmware revision, IP address that is currently in use, and the library serial number.

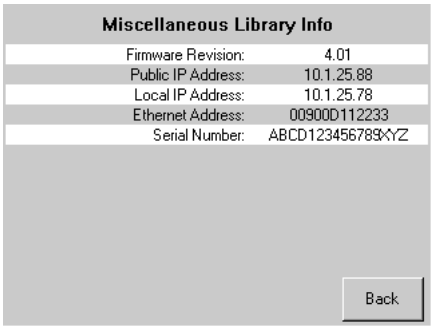


Figure 4–21. View Library Info Screen

Cartridge Map

Selecting this option provides you with a visual indication of all library drives, mail slots and magazine slots, including whether there is a cartridge present and corresponding barcode label, if available.

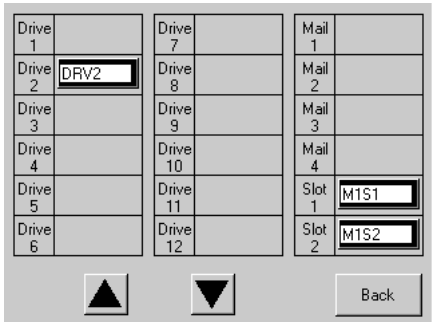


Figure 4–22. Cartridge Map (page 1)

Edit Options

The Edit Options area lets you select the following screens:

- Library
- SCSI
- Network
- Passwords

Library

Selecting this option lets you define the Library options used to configure the library for your specific needs. Defined options can be viewed in the View System Data area, (Figure 4–23). Table 4–2 lists and describes the available options.

NOTE: You can move to the next sequential Library screen by selecting the ▼. To return to the previous Library screen select the ▲or **Back** button to return to the Menu screen.

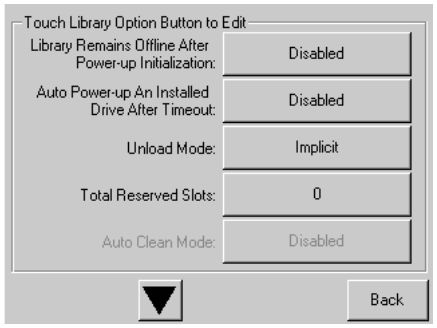


Figure 4–23. Edit Library Options Screen

SCSI

Selecting this option lets you define the SCSI options used to configure the library for your specific needs (Figure 4–24). Table 4–3 lists and describes the available options.

NOTE: You can move to the next sequential SCSI screen by selecting the ▼. To return to the previous SCSI screen select the ▲or **Back** button to return to the Menu screen.

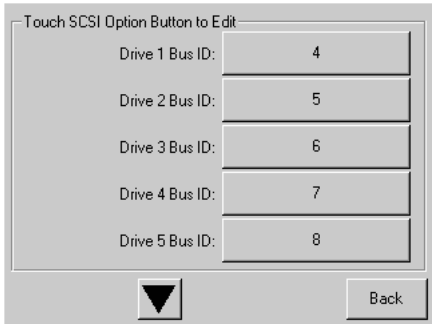


Figure 4–24. Edit SCSI Options Screen

Network

Selecting this option lets you define the Network options used to configure the library for your specific needs (Figure 4–25). Table 4–4 lists and describes the available options.

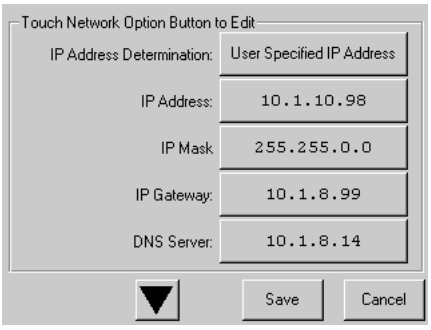


Figure 4–25. Edit Network Options Screen

Passwords

Selecting this option lets you define the Passwords options used to configure the library for your specific needs, see Figure 4–26. See the section on “Front Panel and Media Security Locks” described earlier in this chapter.

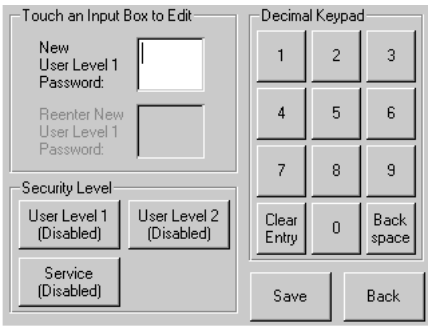


Figure 4–26. Edit Passwords Options Screen

Utilities

The Utilities area lets you select the following screens:

- Maintenance
- Diagnostics
- Factory
- Security Level

Security Level

Selecting this option lets you set passwords for one of the four available security levels (Figure 4–27):

Security level	Access
• User Level 1	Mail Slot access only
• User Level 2	Mail Slot and magazine access only
• Service	User and Service menus
• Factory	User, Service and Factory menus

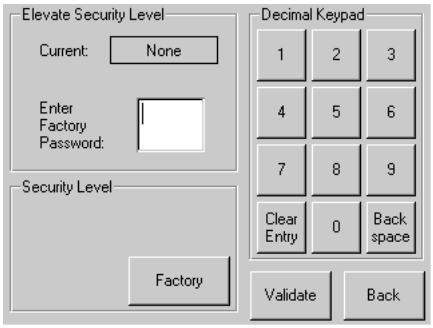


Figure 4–27. Security Level Screen

Inserting and Removing Tape Cartridges

A magazine must be removed from the library in order to remove or insert tape cartridges. Make sure the slot you want to use is not already reserved for a tape cartridge that is now in a tape drive. The safest way to do this is to unload all tape drives before removing a magazine. You can unload all the tape drives either through your host system software or by using the *Move Media* option on the Default Screen.

Removing Magazines

You must manually remove the library magazines. To access the magazines, use the *Magazine Access* option Default Screen. This option lets you open the left or right magazine doors separately or both magazine doors at the same time. After opening the appropriate magazine door, pull the magazine out and away from the library chassis (Figure 4–28).

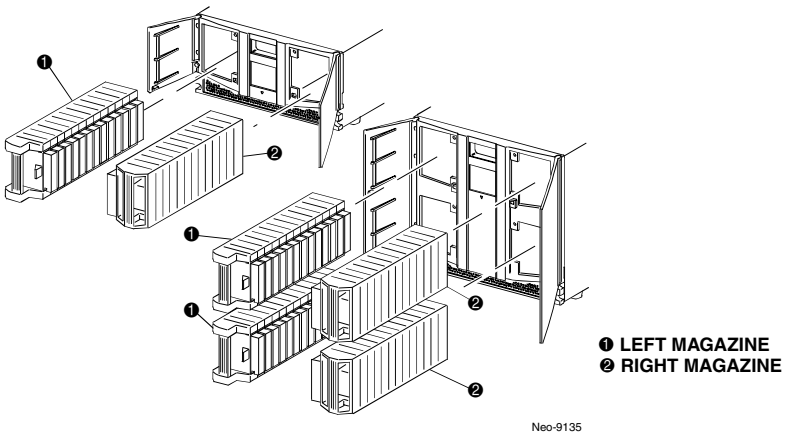


Figure 4–28. Removing Tape Cartridge Magazines

Inserting Cartridges into a Magazine

A full magazine is shown in Figure 4–29. Note that the lowest numbered tape cartridge slot is the one closest to the front of the magazine.

Insert tape cartridges so that the bar code labels are facing outward (Figure 4–29).

NOTE: Handle and store tape cartridges in a clean, dust-free environment.

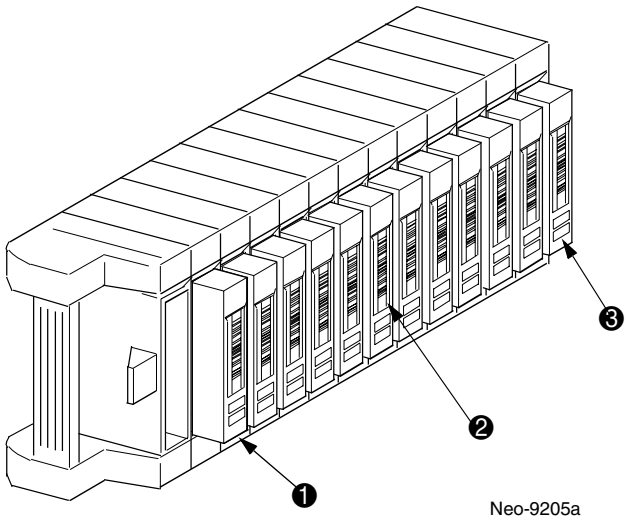


Figure 4–29. Tape Magazine with Tape Cartridges Installed

Using the Mail Slot (Left Magazines Only)

The mail slots (one for Neo Series 2000) are used only with host system software that supports this feature. The mail slot feature lets you insert or remove a single tape without removing the entire magazine.You access the mail slot using the Mail Slot Access option from the default screen. This option lets you open the left magazine door for mail slot access. After opening the left magazine door, pivot the mail slot forward to insert a tape cartridge (Figure 4–30).

IMPORTANT: The mail slot must be enabled (factory default) using the Mail Slot Mode option from the Edit Library Options menu. See Table 4-1 for more information.

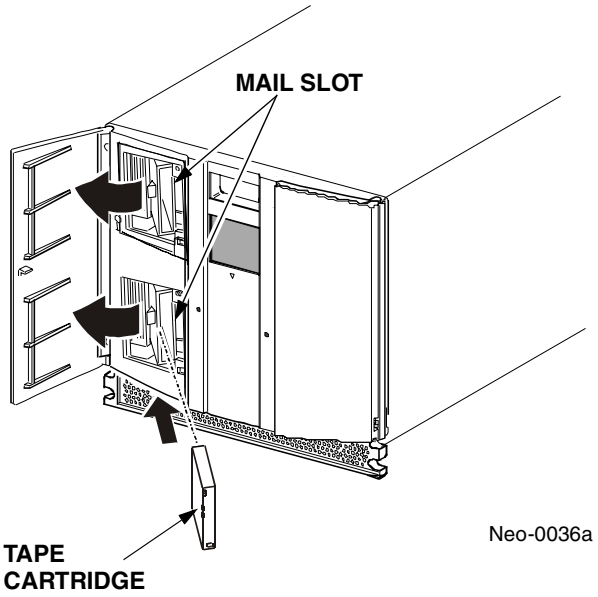


Figure 4–30. Left Magazine Mail Slot

Barcode Labels

Only Overland barcode labels are supported with the library. To order additional labels, contact your authorized Overland reseller. Figure 4–31 shows you how to install a barcode label onto a tape cartridge.

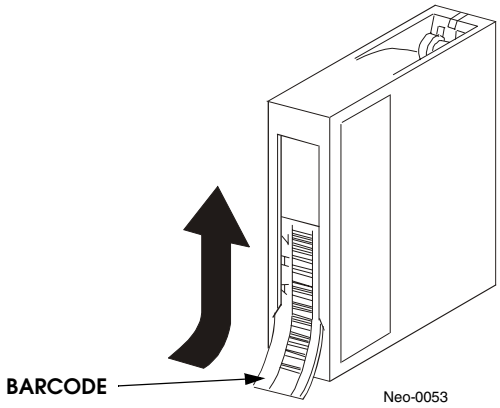


Figure 4–31. Barcode Label installation

Chapter 5 Maintenance

Introduction

This chapter describes the Clean One Drive menu option contained in the Maintenance submenu of the Utilities area on the front panel display. You use the Clean One Drive menu option to clean DLT tape drives installed in the Neo Series Libraries.

CAUTION: Only qualified service technicians should perform the remaining menu options contained in the Maintenance submenu.

IMPORTANT: Only perform the Clean One Drive menu option when the library displays a message informing you that a drive needs cleaning.

NOTE: When Overland issues new firmware, a qualified service technician must install it.

Running a Cleaning Cartridge

Because the cleaning cartridge is abrasive, you should not use it unless the message "Use Cleaner" appears on the front panel display. There are two ways to manage the cleaning of the installed tape drives:

- Automatically, by enabling Auto Clean Mode
- Manually, by selecting the Clean One Drive menu option from the Maintenance submenu on the front panel display

Automatically Running a Cleaning Cartridge

You can configure the library so that it automatically runs the cleaning cartridge mode. After a tape drive that needs cleaning completes an unload operation, it sends a cleaning needed message to the library. This activates an automatic cleaning cycle if the cleaning cartridge slot has been reserved and Auto Clean Mode has been selected from the library Options menu.

To automatically run a cleaning cartridge using Auto Clean Mode:

1) Reserve a cleaning cartridge slot. See the section on Setting up Reserved Slots in Chapter 3 for more information.
2) Enable Auto Clean Mode. See the section on Edit Options in Chapter 4 for more information.

Manually Running a Cleaning Cartridge

A cleaning cartridge can be installed and run from one of three locations:

- The Mail Slot - This location has the advantage of not needing to remove a magazine to use a data cartridge slot or to reserve a cleaning cartridge slot.
- A Data Cartridge Slot - This location requires removing a magazine to insert a cleaning cartridge in a data cartridge slot and then removing it after cleaning.
- The Cleaning Slot - This location requires reserving the last data cartridge slot for exclusive use as a cleaning cartridge slot. The advantage with this method is that the cleaning cartridge is stored in the library and is always available for use. It needs to be handled only when it expires and needs to be replaced. See Setting up Reserved Slots in Chapter 3 for more information.

Running a Cleaning Cartridge from the Mail Slot

1) Install a cleaning cartridge into the Mail Slot.
2) Select the Clean One Drive menu option from the Maintenance submenu on the front panel display.
3) Select Source and then Mail Slot in the Element Type box.
4) Select Cleaning. If the default entry is not the tape drive to be cleaned, press Drive in the Destination Element Type box to sequence through the available tape drive choices. Or, use the Decimal Keypad Backspace and Numeric Keys to enter the tape drive number directly.
5) When the source and destination entries are correct, select Execute Clean.
6) When the cleaning cycle completes, the library returns the cleaning cartridge back to the Mail Slot. To remove the cleaning cartridge, select Mail Slot Access from the library Status screen.

Running a Cleaning Cartridge from a Data Cartridge Slot

1) Install a cleaning cartridge into an appropriate data cartridge slot (Slot 0, for example).
2) Select the Clean One Drive menu option from the Maintenance submenu on the front panel display.
3) Select Source. If the default entry is not the slot with the cleaning cartridge, press Slot in the Element Type box to sequence through the available cartridge slots. Or, use the Decimal Keypad Backspace and Numeric Keys to enter the slot number directly.
4) Select Cleaning. If the default entry is not the tape drive to be cleaned, press Drive in the Destination Element Type box to sequence through the available tape drive choices. Or, use the Decimal Keypad Backspace and Numeric Keys to enter the tape drive number directly.
5) When the source and destination entries are correct, select Execute Clean.
6) When the cleaning cycle completes, the library returns the cleaning cartridge back to the data cartridge slot. To remove the cleaning cartridge, select Magazine Access from the library Status screen.

Running a Cleaning Cartridge from the Cleaning Slot

1) Reserve the cleaning cartridge slot. See the section on "Setting up Reserved Slots"in Chapter 3 for more information.
2) Install a cleaning cartridge in the reserved slot.
3) Select the Clean One Drive menu option from the Maintenance submenu on the front panel display. Note that the Source window defaults to the cleaning slot (Cln'g Slot 0).
4) Select Cleaning. If the default entry is not the tape drive to be cleaned, press Drive in the Destination Element Type box to sequence through the available tape drive choices. Or, use the Decimal Keypad Backspace and Numeric Keys to enter the tape drive number directly.
5) When the destination entry is correct, select Execute Clean.
6) When the cleaning cycle completes, the library returns the cleaning cartridge back to the cleaning cartridge slot. To remove the cleaning cartridge, select Magazine Access from the library Status screen.

Replacing a Cleaning Cartridge in a Reserved Slot

When the cleaning cartridge has been used up, a message appears on the front panel display indicating that the cleaning cartridge has expired. Examine the library Status screen to make sure that the cleaning cartridge has been unloaded from the tape drive. If not, then unload it using the Move Media menu option from the library Status screen.

A cleaning cartridge can be removed and replaced by removing the right magazine or using the mail slot.

Replacing a Cleaning Cartridge in the Right Magazine

1) Select Magazine Access from the library Status screen.
2) Remove the magazine from the library.
3) Remove the expired cleaning cartridge from the last slot. Mark it EXPIRED and then properly dispose of it.
4) Place a new cleaning cartridge in the last slot of the magazine.
5) Replace the right magazine.

Replacing a Cleaning Cartridge in the Mail Slot

1) Select the Move Media menu option from the library Status screen.
2) Select Source and then press Cleaning Slot in the Source Element Type box.
3) Select Destination and then press Mail Slot in the Destination Element Type box.
4) Select Execute Move to place the cleaning cartridge in the Mail Slot.
5) When the move completes, press the **Back** button to access the default front panel display.
6) Select Mail Slot Access from the library Status screen and then remove the expired cleaning cartridge. Mark it EXPIRED and then properly dispose of it.
7) Place a new cleaning cartridge in the Mail Slot.
8) Select the Move Media option from the library Status screen.
9) Select Source and then press Mail Slot in the Source Element Type box.
10) Select Destination and then press Cleaning Slot in the Destination Element Type box.
11) Select Execute Move to put the new cleaning cartridge in the reserved slot.

Chapter 6 Troubleshooting

Introduction

This chapter describes the error messages and descriptions that may be displayed when there is a possible malfunction, including:

- Platform problems
- General drive errors
- Error recovery
- Fault Symptom Codes (FSCs)

Platform Problems

An incorrect installation or configuration can cause platform problems. In this case, the library appears to be operating normally, but no data can be interchanged. You also might or might not get an error code on the Graphical User Interface (GUI) touch screen. To identify an error caused by this type of problem, check your installation and configuration setup. See Chapter 2, for information on how to correctly install and configure the library.

General drive errors usually result from a miscommunication between the library and tape drive or a mechanical malfunction within the library. Both platform problems and general drive errors display an error message and a Fault Symptom Code (FSC) on the GUI touch screen. Use an FSC to report errors to your service provider, or in some cases, to determine a recovery procedure.

Error Recovery

Figure 6–1 outlines the recommended steps for error recovery. You should follow this chart in all cases.

Error Recovery Procedures (ERPs) are listed in detail in Table 6–1; FSCs are listed in Table 6–2 along with their related ERPs.

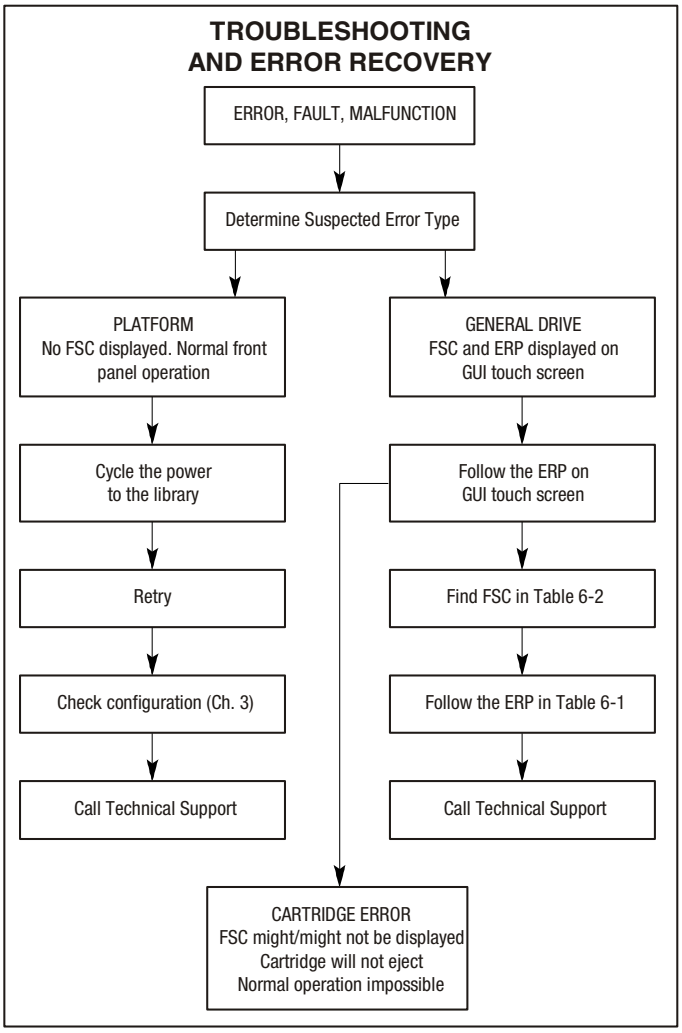


Figure 6–1. Troubleshooting Flow Chart

Error Recovery Procedures

Table 6–1 lists ERPs for errors reported on the GUI touch screen of the library. This list includes only those procedures that can be safely performed by an end user.

Table 6–1 Error Recovery Procedures

ERP Code	Procedure/Description
C	Cycle power to the library using the Power option on the GUI touch screen. Wait 30 seconds to power on again.

Table 6–1 Error Recovery Procedures

ERP Code	Procedure/Description
D	Turn off power to the library and inspect connectors and cables.
F	Invalid operation. Select parameters correctly and try again.
G	Call Technical Support.

Fault Symptom Codes (FSCs)

FSCs that appear on the GUI touch screen are described in the below tables, Chapter 4 "Operation." A descriptive message and instructions for clearing the fault accompany each FSC. If a fault persists, look up the FSC in Table 6–2 to determine the error recovery procedure or to report it to your service provider.

Table 6–2 Fault Symptom Codes

Message	FSC	ERP	
Novram Update Error	0306	G	The non-volatile configuration area in flash memory could not be updated (programmine error).
Barcde Not Active Error	0501	D,G	The hardware could not detect a barcode reader.
OS Catastrophic Error	0901	G	Catastrophic Smx operating system error - task creation error, unexpected error.
OS Task Exit Error	0902	G	SmxNet (Ethernet, Web TLC) task error - server spawn error, TCP/IP fatal error.
Invalid Ethernet (MAC) Address	0A01	F	The library's Ethernet (MAC) address stored in the non-volatile configuration is not valid - the last 3 octets are either 0:0:0 or 255:255:255.
Invalid IP Subnet Mask (255.255.255.255)	0A02	F	The Etthernet subnet mask stored in the non-volatile configuration is not valid - 255.255.255.255.
SCSI Firmware Error	1001	D,G	Internal SCSI task processing error - unexpected state or hardware status.
SCSI FIFO Empty	1002	D,G	The SCSI controller data FIFO is empty but should contain more data bytes.
SCSI FIFO Error	1003	D,G	The SCSI controller data FIFO should be empty but still contains data bytes.
SCSI Gross Error	1004	C,D,G	The SCSI controller detected a gross error condition - invalid SCSI bus phase or DMA error.
Illegal SCSI Cnt Cmd	1005	C,D,G	Either an invalid command was sent to the SCSI controller, or the controller was not in the correct mode.

Table 6–2 Fault Symptom Codes (Continued)

Message	FSC	ERP	
SCSI Invalid Element	1007	D,G	Internal SCSI task processing error - invalid element type was detected
SCSI Invalid Int.	1009	D,G	The SCSI controller posted an invalid interrupt status.
Loader Not Ready	2004	C,G	Fail to fetch, stow, scan, move passthru, Or when loader detects invalid command, aborts command.
Door Open (status only)	2009	F	Door is force opend or door sensor failed.
Cart Unaccessible	200C	F	For a DLT drive, fail to operate drive handle in unloaded state. For a SDLT, indicates the tape is NOT in the unloaded state. For an LTO, indicates the tape is not ejected. Cartridge in drive is not accessible from changer.
Drive In Error	200D	C,G	A general drive error detected by control task.
No Magazine	200E	F	Cannot move, element not installed , from changer.
Removal Prevented	200F	F	Receive medium prevent removal from drive for a fetch.
Ctl. Firmware Error	2010	C,G	Internal inter task processing error. Unexpected event. SMX send or receive error.
Drive Timeout Error	2030	C,G	Can't communicate with DLT drive.
Drive Code Update Command Error	2080	C,G	Update code from SCSI or from TAPE failed.
Move Command Failure	2081	C,G	Move command from / to drive slot failed, detected by control task.
Open Mail Slot Fault	2090	C,G	Door open sensor timeout detected when open door.
Open Left Door Fault	2091	C,G	Door open sensor timeout detected when open door.
Open Right Door Fault	2092	C,G	Door open sensor timeout detected when open door.
Open Doors Fault	2093		Door open sensor timeout detected when open door.
Open DLT Handle Fault	2094	C,G	Failed to open DLT handle.
No IP Address Found	20a0	C,G	SMC router fialed to get an IP address.
No IP Address Mode Fault	20a1	C,G	SMC router failed to detected static or ip address Mode.
Unknown exchange for the async message	20b0	C,G	Unexpected exchange detected when process Messages.

Table 6–2 Fault Symptom Codes (Continued)

Message	FSC	ERP	
Drive In Error	20c0	C,G	CotronI failed to set SCSI id.
Drive In Error	20c1	C,G	Control failed to installed drive.
Drive In Error	20c0	C,G	CotronI failed to set SCSI id.
Drive In Error	20c1	C,G	Control failed to installed drive.
Motor Fault Condition	3000	C,G	One of the motors has been disabled and could not be re-enabled.
Picker Tach Errors	3002	C,G	Picker Tach errors were detected when checking slots.
Bin Fetch Failure	3011	C,G	Loader failed to fetch a cartridge from a bin.
Drive Fetch Failure	3013	C,G	Loader failed to fetch a cartridge from a drive.
Drive Timeout Failure	3015	C,D,G	Loader detects unload command timeout.
Drive Status Failure	3016	C,D,G	Detected drive error from fetch, stow and wait for handle ok DLT drive operation.
Drive In Flux Timeout	3017	C,D,G	Time out waiting for drive to clear the flux status.
Drive Load Retry Failed	3018	C,G	LTO drive fail to load, detected in drive task.
Drive Open Door Failed	3019	C,G	Failed open DLT drive door.
Drive Close Door Failed	301A	C,G	Failed close DLT drive door.
Drive Communication Error	301B	C,D,G	Intertask send, receive failed.
Drive Get General Status Fail	301C	C,D,G	Drive communication failed.
Drive Get Status 3 Fail	301D	C,D,G	NOT USED
Undefined Config	3020	C,G	In loader, unexpected config, not a Thunder or Lightning.
Orphan Cartridge not flowed	3030	C,G	The loader could not succesfully stow an orphan cartridge to a bin.
Chassis S/N Mismatch. Previous S/N retained	3031	G	The serial number scanned from the barcode label doesn't match the value stored in non-volatile memory.
Chassis S/N Character count is not correct	3032	G	A valid serial number barcode label could not be read.
Chassis S/N did not scan	3033	G	A valid serial number barcode label could not be read
Chassis S/N save operation failed	3034	G	The serial number scanned from the barcode label could not be saved to non-volatile memory.

Table 6–2 Fault Symptom Codes (Continued)

Message	FSC	ERP	
Motor Firmware Error	3040	C,G	The loader task detected an unexpected status and could not recover (internal target error).
Loader Received Invalid Command	3041	C,G	The loader task received an unexpected command and could not recover (internal target error).
Motor Firmware Error	3042	C,G	The loader task detected an unexpected status and could not recover (internal target error).
Missing Magazine	3050	F	In diag, no magazine installed for diag to run.
No Cartridges In Library	3051	F	No cartridge available for diag to run.
Too Many Cartridges	3052	F	Unable to run cart or drive cycle, loader is full with cartridges.
Need 1 Drive Minimum	3054	F	No available drive to run diag.
Invalid Magazine Type	3057	F	Unsupport magazine type detected.
Magazine Type Change Not Handled	3058	F	Unsupport magazine type detected.
Drive Type Not Supported	3059	F	Unsupport drive type detected.
Diag Fetch, Drive not loaded	305b	F	Diag: No cartridge present for a fetch.
Diag Timeout waiting for drive empty, ready	305d	F	Fetch , timeout waiting for drive unload.
Invalid bin number	305f	F	Invalid bin number detected in diag.
Zone Sequence Error	3060	C,G	Eject command timeout.
Drive 0 Eject Failed	3074	C,G	Eject command timeout.
Drive 1 Eject Fail	3075	C,D,G	Eject command timeout.
Drive 2 Eject Fail	3076	C,D,G	Eject command timeout.
Drive 3 Eject Fail	3077	C,D,G	Eject command timeout.
Diag get drive 0 status failed	3078	C,D,G	Failed to get drive status, communication error.
Diag get drive 1 status failed	3079	C,D,G	Failed to get drive status, communication error.
Diag get drive 2 status failed	307a	C,D,G	Failed to get drive status, communication error.
Diag get drive 3 status failed	307b	C,D,G	Failed to get drive status, communication error.
Drive Stow Failed, Media Returned to Source	3082	F	The DLT drive detected an SDLT cartridge and the cartridge has been returned to its origin.
Drive Stow Failed, Media Remains in Drive	3083	F	The DLT drive detected an SDLT cartridge but the cartridge could not be returned to its origin.

Table 6–2 Fault Symptom Codes (Continued)

Message	FSC	ERP	
UnSupported Drive For Requested Operation	3084	F	Unsupported drive type.
No Retry On Fetch/Stow	308F	F	The loader retried an operation and retries were disabled.
Picker Jammed	3100	C,G	The picker jammed during loader initialization
Picker Jammed 2	3102	C,G	The picker jammed during a bin stow operation.
Picker Jammed 3	3103	C,G	The picker jammed during a bin stow operation.
Picker Jammed 4	3104	C,G	The picker jammed during a bin stow operation.
Picker Jammed 5	3105	C,G	The picker jammed during a bin stow operation.
Picker Jammed 6	3106	C,G	The picker jammed during a bin stow operation.
Picker Jammed 7	3107	C,G	The picker jammed during a pass-thru fetch operation.
Picker Jammed 8	3108	C,G	The picker jammed during a pass-thru fetch operation.
Picker Jammed 11	310B	C,G	The picker jammed during a drive fetch operation
Picker Jammed on Stow	310F	C,G	The picker jammed on a stow operation.
Picker Retries Exceeded 1	3111	C,G	Picker retries exceeded during a pass-thru fetch operation.
Picker Retries Exceeded 3	3113	C,G	Picker retries exceeded during a bin stow operation.
Picker Retraction Error	3115	C,G	The picker did not retract during a bin check operation.
Shuttle Jammed	3200	C,G	The shuttle could not reach the target location.
Rotary Jammed	3300	C,G	The rotary track could not reach the target location.
Shuttle on Wrong Side Of The Rotary	3301	C,G	The zone indicators show that the shuttle is backwards on the rotary track during power-up initialization.
Passthrough Elevator Jammed	3400	C,G	The pass-thru shuttle could not reach the target location.
Vertical Elevator Jammed	3500	C,G	The vertical elevator could not reach the target location (4000 Series only).
All Slots Empty	5011	F	There are no cartridges installed in any of the reserved cleaning slots.

Table 6–2 Fault Symptom Codes (Continued)

Message	FSC	ERP	
DLT Already Loaded	5014	F	The cleaning operation failed because the drive already has a cartrdige inserted.
Expired Clean'g Cart	5015	F	The cleaning operation failed due to an expired cleaning cartridge.
Not a Clean'g Cart	5016	F	The cleaning operation failed because the loaded cartridge is not a cleaning cartridge.
DLT Timeout Error	5035	C,D,G	The cleaning operation failed because the drive timed out.
Move Command Fail	503B	F	A front panel move operation failed.
Clean Operation Timeout	503C	F	The cleaning operation failed because the drive timed out.
Drive Status Fail	503D	F	The cleaning operation failed because the librray could not retrieve drive status.
Command response from unexpected source	7001	D,G	A command response was received from a task to which a command had not been sent.
Control command execution failed	7002	D,G	A command response opcode from the Control task was was not anticipated or is un-identifiable.
Control response not matched to a known command	7003	D,G	A command response was received from the Control task, but the original command opcode could not be determined.
Loader response not matched to a known command	7004	D,G	A command response was received from the Loader task, but the original command opcode could not be determined.
Drive response not matched to a known command	7005	D,G	A command response was received from a Drive task, but the original command opcode could not be determined.
Flash response not matched to a known command	7006	D,G	A command response was received from the Flash task, but the original command opcode could not be determined.
Drive index on Update Status message was invalid	7007	C,D,G	An Update Drive Status message was received from a module, but the drive index was out of range.
The Drive response was not expected	7008	C,D,G	A command response was received from a Drive task to which a command had not been sent.

Table 6–2 Fault Symptom Codes (Continued)

Message	FSC	ERP	
The opcode for a WORD message was unknown	7009	C,D,G	A WORD-sized message was received but the message opcode could not be identified.
The opcode for a DWORD message was unknown	700A	C,D,G	A DWORD-sized message was received but the message opcode could not be identified.
The button causing library to go offline was unknown	700B	C,D,G	A command to take the library offline was completed successfully, but the GUI button that initiated the action could not be identified.
Destination Xchg was Null	700C	C,G	Attempting to send a command to a task, but the argument exchange pointer was NULL.
Sending of a cmd failed	700D	C,G	An attempt to place a command on a task exchange failed.
Deactivating a drisve that is not attached	700E	C,G	The Control task is indicating that a request to deactivate a drive failed becase the drive is not attached.
Deactivation of a drive failed	700F	C,G	The Control task is indicating that a request to deactivate a drive failed; reason is not known.
Drive removal failed	7010	C,G	The Drive task is indicating that a request to power-down a drive failed; reason is not known.
Drive is Active failed	7012	C,G	The Drive task is indicating that a request to determine if a drive is executing a host command failed; reason is not known.
Control Com Unidentified	7013	C,G	During HotSwap, a command response from the Control task could not be associated with any outstanding command.
Drive status update failed	7014	C,G	The Drive task is indicating that a request to determine the current state of a drive failed; reason is not known.
Loader command execution failed	7015	C,G	The Loader task is indicating that a command has failed to complete successfully.
Sequential command execution failed	7016	C,G	The Sequential task is indicating that a command has failed to complete successfully.
Destination Xchg for msg. was Null	7017	C,G	Attempting to send a message to a task, but the argument exchange pointer was NULL.

Table 6–2 Fault Symptom Codes (Continued)

Message	FSC	ERP	
Bad src mod in peg msg	7018	C,G	A message was received from a remote module, but the module number was out of range.
A Peg message has a pointer to NULL.	7019	C,G	Peg message wrapping a Null msg. ptr.
Xchg conversion failed	701A	C,G	Attempt to determine the module number containing the task that is returning a command response failed.
Invalid L-drive number to convert	701B	C,G	Attempt to send a command to a drive, but the logical drive number is out of range.
Invalid P-drive number to convert	701C	C,G	Attempt to send a command to a drive, but the physical drive number is out of range.
Invalid mod number to convert	701D	C,G	Attempt to send a command to a drive in a remote module, but the module number is out of range.
Unknown drive type	701E	C,G	Attempt to show detailed drive status of a drive whose type is unknown.
The Scsi response was not expected	701F	C,G	The command response from the Scsi task in a remote module was unexpected.
The Flash response was not expected	7020	C,G	The command response from the Flash task in a remote module was unexpected.
Scsi response not matched to a known command	7021	C,G	A command response was received from a Scsi task, but the original command opcode could not be determined.
Unexpected state after NonVolConfig cmd	7022	C,G	After successfully completing a NonVolConfigPut command, the current state of the save operation was unknown.
Unexpected state after SCSI mode cmd	7023	C,G	After successfully completing a ScsiUpdateModeParameters command, the current state of the save operation was unknown.
Unexpected state after SCSI init cmd	7024	C,G	After successfully completing a Scsilnitcommand, the current state of the save operation was unknown.
Cartridge reject recovery failed	8001	C,D,G	The DLT drive failed to successfully load a tape even after retries.
Drive Fan stalled	8002	C,D,G	The fan in the drive hot-swap shoe is either not installed or has stalled.

Table 6–2 Fault Symptom Codes (Continued)

Message	FSC	ERP	
Drive load did not complete	8003	C,D,G	The drive failed to successfully load a tape.
Invalid drive was installed	8004	F	One or more installed drives are of a type either unknown or not supported in the current library personality.
LTO unmask drive failed	8005	F	The LTO drive unmask operation failed.
LTO mask drive failed	8006	F	The LTO drive mask operation failed.
LTO unload drive(in load retry) failed	8007	F	The LTO drive failed to unload a cartridge during a load retry operation.
Is Drive Unloaded Failed	8008	F	The LTO drive failed to return status when being polled for unloaded state.
Orphan cartridge recovery failed	9001	C,D,G	The master module could not successfully return an orphan cartridge to a slot location.
Master pass-thru opto failed.	9003	C,D,G	The master module opto sensor was not detected during the power-up pass-thru module inventory.
SMX send error	A001	C,G	An attempt to place a message on a task's exchange generated a kernel error.
SMX receive error	A002	C,G	An attempt to receive a message from a task's exchange generated a kernel error.
Comm free list empty	A003	C,G	An attempt to acquire a message from the free pool failed because the pool is empty.
Invalid comm. put attempt	A004	C,G	An attempt to place a message on a task's exchange failed because either the argument message pointer was NULL or the argument exchange pointer was NULL.
Invalid comm. get attempt	A005	C,G	An attempt to receive a message from a task's exchange failed because the argument exchange pointer was NULL.
Comm initialization error	A006	C,G	The Comm manager could not be initialized at power-up because system is out of memory.
Put of a NULL comm.	A007	C,G	An attempt to place a Comm block on a task's exchange failed the argument Comm block pointer was NULL.
Msg contains no comm.	A008	C,G	A message obtained from the free pool did not contain a Comm block.

Table 6–2 Fault Symptom Codes (Continued)

Message	FSC	ERP	
Comm return address is unknown	A009	C,G	An attempt to return a command response to the originating task failed because the originator could not be determined.
Bad Image CRC	F001	F	The uploaded firmware image has a bad CRC and is probably corrupted.
Flash erase sector failed	F002	F	One of the flash memory sectors could not be programmed.
Flash program sector failed	F003	C,G	One of the flash memory sectors could not be erased.
Bad flash CRC	F004	C,G	The firmware image programmed into flash memory has a bad CRC and is probably corrrupted.
Flash exit error	F005	C,G	Internal flash task error.
Incompatible image	F006	F	The uploaded firmware image is not compatible with the library hardware, possibly an older firmware version.
Buffer allocation failed	F402	F	The flash task could no allocate a buffer area to hold the firmware image to be uploaded.

If an error message appears that is not included in Table 6–2, write down the fault code number and follow the recovery procedure. If the same error occurs again, call your service provider.

Chapter 7 NeoCenter Utility

Introduction

NeoCenter lets you configure the unit using the familiar Windows graphical user interface. The utility lets you perform the following tasks:

- Establish communication with your host.
- Set IP addresses.
- Set SNMP traps.
- Set SCSI address for drives
- Set Library parameters
- Set SCSI Vendor and Product ID
- Specify the E-mail addresses of notification recipients.
- Set Parameters for a remote FTP Server to permit file uploads.
- Set security passwords to control access.
- Name the Library for quick accurate identification.
- Define Partitions that “virtually” separate magazines and drives for use by multiple servers.

NeoCenter Utility Task Procedures

Establishing Communication With Your Host:

1) Turn on power.
2) Connect the RJ11-DB9 cable between the connector labeled RS232 on the Neo Series Library and a COM port on the host computer. (Note which port you select.)
3) Power up the host computer, and boot into Windows 95, 98, 2000 or NT 4.0.
4) Install the NeoCenter utility from the included CDRom
5) Launch the NeoCenter utility.

The NeoCenter Main screen appears:

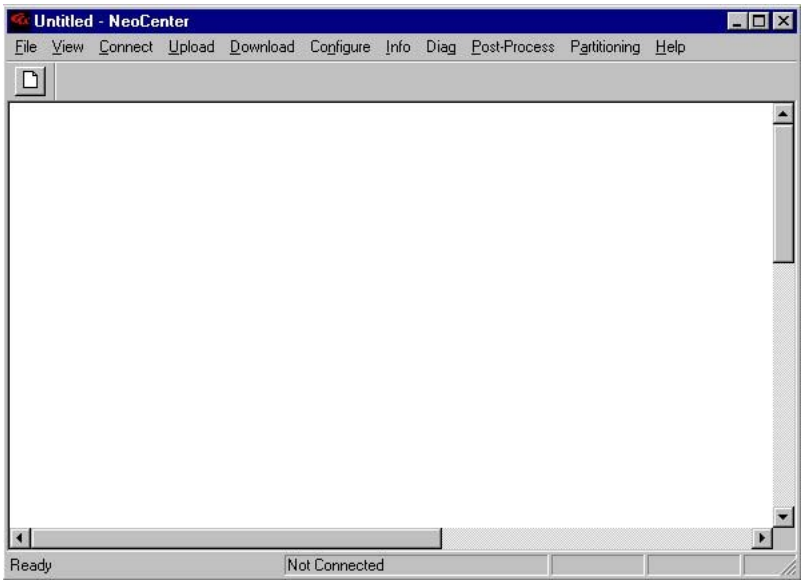

Untitled - NeoCenter
File View Connect Upload Download Configure Info Diag Post-Process Partitioning Help
Ready
Not Connected

Figure 7–1. Main Screen

6) Click on *Connect*.

The Serial Port Setting screen appears.

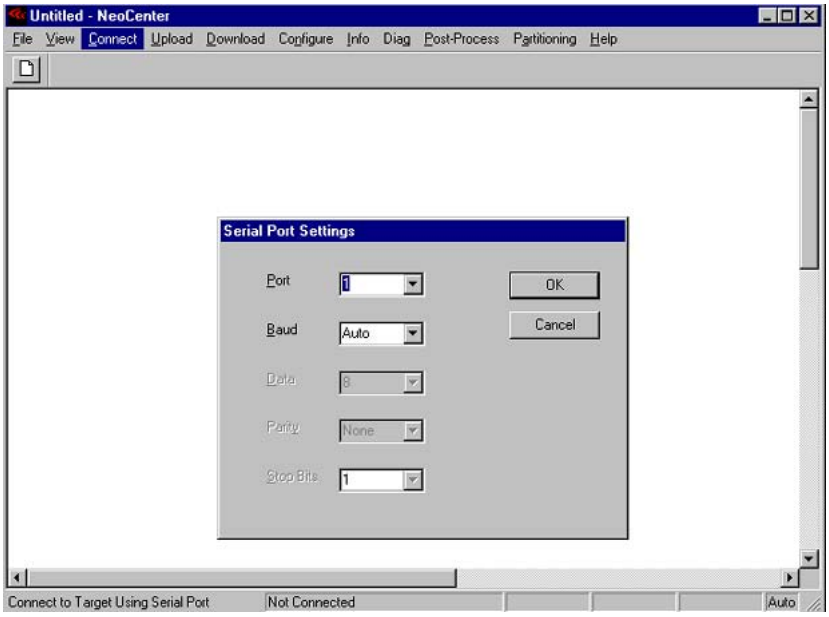


Figure 7–2. Main Screen

7) Verify settings of the Com port and click on *OK*.

NOTE: If the connection is not successful, check all cable connections and repeat steps (6) and (7). If communication with the Library fails again, contact Overland Storage Technical Support.

Setting IP addresses

NOTE: Configuration addresses are network specific. Contact your network system administrator for the appropriate values. Depending on the chosen values, these settings enable access to your library from your network and/or the World Wide Web.

1) Establish communications with the Library, if not already established.
2) On the NeoCenter Main screen, click on *Configure | Set Values*.

An upload process screen is visible for a moment, and then the Configure dialog box appears:

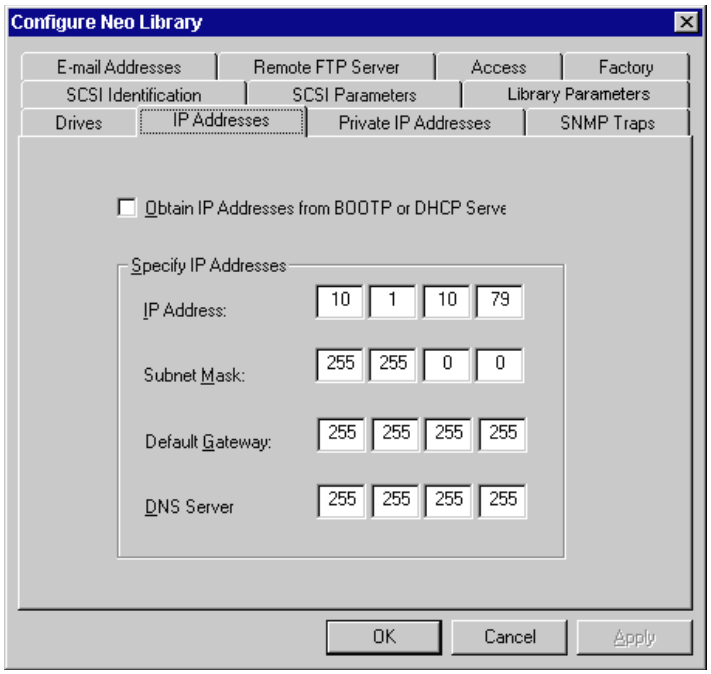


Figure 7–3. Configure Dialog Box - IP Addresses

3) Click on the *IP Addresses* tab if it's not currently displayed.
4) Set the IP addresses by one of the two ways presented by the tab panel: Either click in the check box to let the addresses be set via a Dynamic Host Configuration Protocol (DHCP) or BootP server, or specify the four addresses individually. (Place the text cursor in a field and type in new values. Use the Tab key or mouse to move from field to field.)

5) Click *OK* (if you have completed all configuration settings) to accept the settings. Clicking *OK* exits you from the configuration screen. Refer to the "Exiting The Configuration Menu" section later in this chapter.

Access Security

Since Web TLC permits total control over a library, security concerns demand that those capabilities are limited to the appropriate users. Web TLC limits access to the system by means of passwords set on the NeoCenter configuration screen. Web TLC Passwords allow granting two different levels of system access:

- Level 1 access allows operator viewing of library status only.
- Level 2 access allows full control, permitting the user to move tapes and modify library configuration settings.
- Level 2 access can be disabled entirely through the use of a radio button. See Figure 7–4.

NOTE: The Access tab panel also permits the user to specify a familiar, mnemonic name for your library. This name appears on many pages of your Web TLC site.

Setting Access Passwords:

1) Establish communications with the Library, if not already established.
2) On the Configure screen, click on the *Access* tab.

The Access tab panel appears:

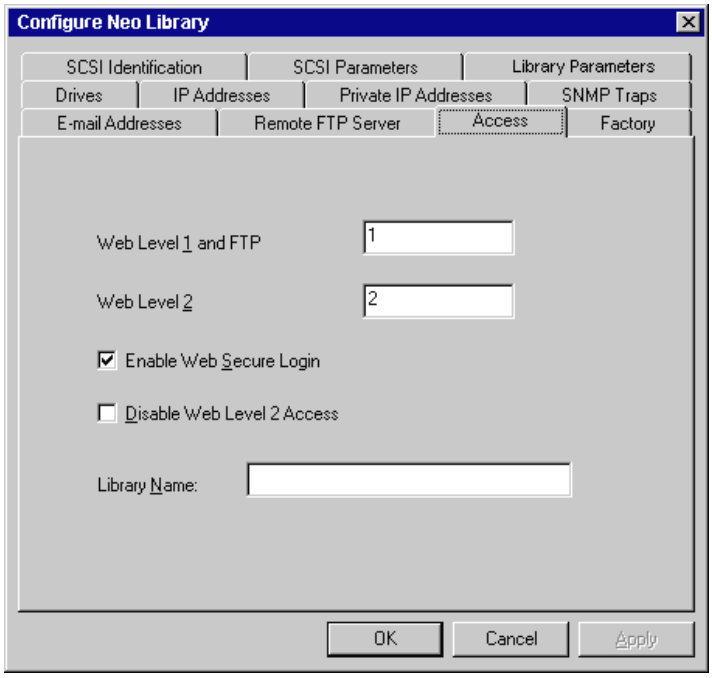


Figure 7–4. Configure Dialog Box - Access

3) Place the text cursor into a level field and type in the password.

4) Enable/Disable Level 2 Access.

5) Enter Library Name, if not entered previously

6) Click *OK* (if you have completed all configuration settings) to accept the settings. Clicking *OK* exits you from the configuration screen. Refer to the "Exiting The Configuration Menu" section later in this chapter.

Set SNMP Traps

NOTE: Configuration addresses are network specific. Contact your network system administrator for the appropriate values. These settings enable the Web TLC to send system events asynchronously to the network.

1) Establish communications with the Library, if not already established.
2) On the Configure dialog box, click on the *SNMP Traps* tab.

The SNMP tab panel appears. It displays fields that let you enter the IP addresses of up to four hosts that can receive SNMP traps:

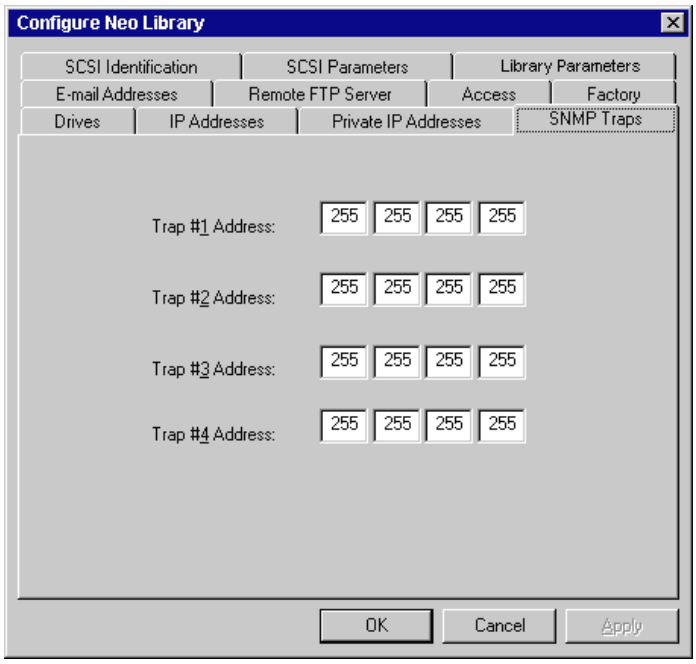


Figure 7–5. Configure Dialog Box - SNMP Traps

3) Place the text cursor in a field and type in values. (Use the *Tab* key or mouse to move from field to field.)
4) Click *OK* (if you have completed all configuration settings) to accept the settings. Clicking *OK* exits you from the configuration screen. Refer to Appendix section later in this chapter.

Set E-mail Addresses

These addresses will be email upon notification of specific system events.

1) Establish communications with the Library, if not already established.
2) On the Configure screen, click on the *E-Mail Addresses* tab.

The E-Mail Addresses tab panel appears:

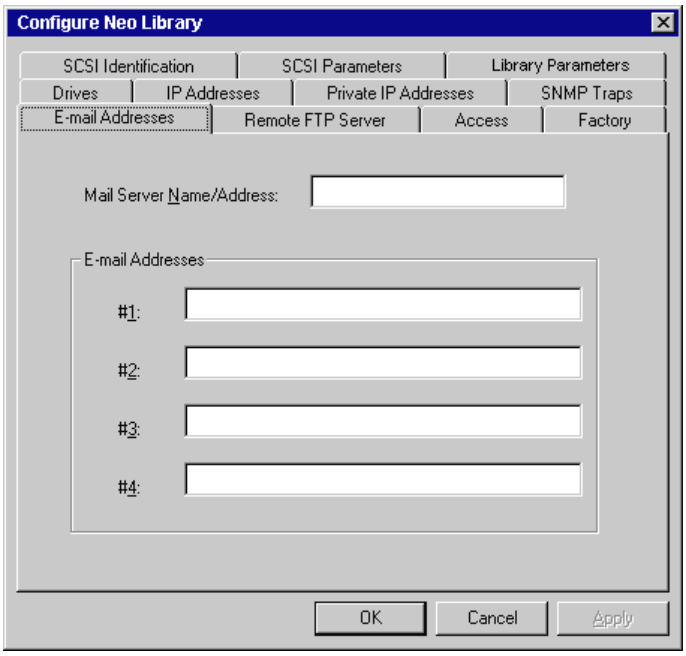


Figure 7–6. Configure Dialog Box - E-mail Addresses

3) Enter the name or IP address of the SMTP mail server.
4) Enter up to four E-mail addresses.
5) Click *OK* (if you have completed all configuration settings) to accept the settings. Clicking *OK* exits you from the configuration screen. Refer to the "Exiting The Configuration Menu" section later in this chapter.

Parameters For A Remote FTP Server:

These settings enable the user to download firmware to the Web TLC or to your Library via a remote ftp site.

1) Establish communications with the Library, if not already established.
2) On the Configure screen, click on the *Remote FTP Server* tab. To reach Overland Storage's FTP site contact Technical Support for the current User ID and Password.

The Remote FTP Server tab panel appears:

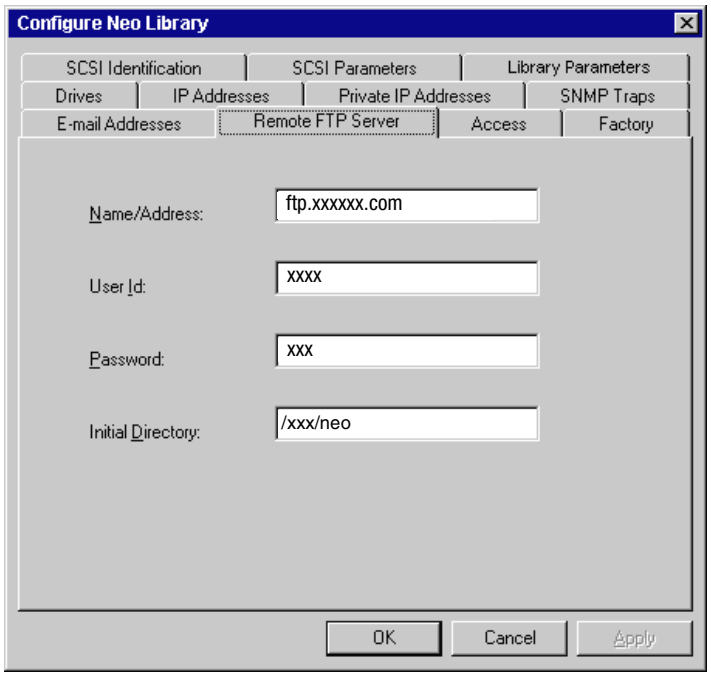


Figure 7–7. Configure Dialog Box - Remote FTP Server

3) Enter the following server information:

- Name or IP address

NOTE: If the default Name/Address has been updated or is unavailable contact Overland Storage Technical Support.

- User ID
- Password
- Initial directory.

4) Click *OK* (if you have completed all configuration settings) to accept the settings. Clicking *OK* exits you from the configuration screen. Refer to the "Exiting The Configuration Menu" section later in this chapter.

SCSI Parameters

1) Establish communications with the Neo Library, if not already established.
2) On the Configure Neo Library screen, click on the *SCSI Parameters* tab.

The SCSI Parameters tab panel appears.

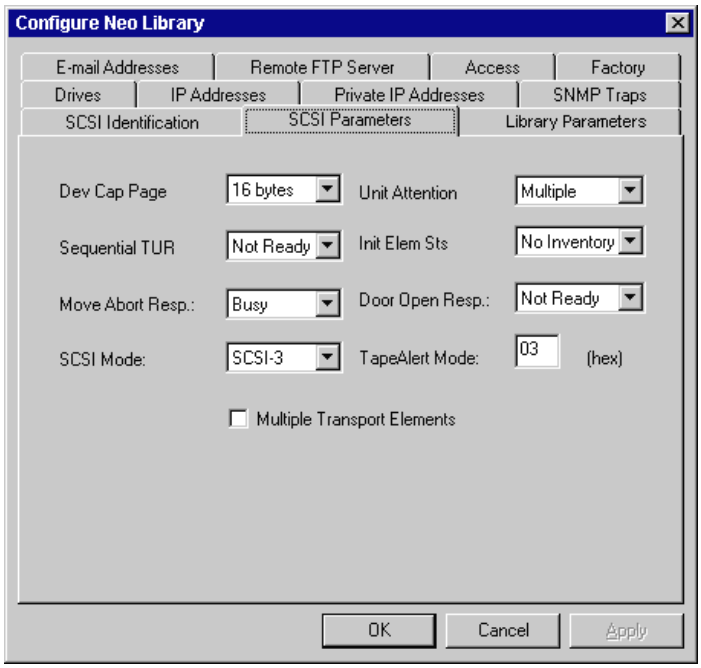


Figure 7–8. Configure Dialog Box - SCSI Parameters

3) Click *OK* (if you have completed all configuration settings) to accept the settings. Clicking *OK* exits you from the configuration screen. Refer to the "Exiting The Configuration Menu" section later in this chapter.

NOTE: For a complete description of the above selectable options, including default options, see Chapter 3 "Library Configuration".

SCSI Identification

1) Establish communications with the Neo Library, if not already established.
2) On the Configure Neo Library screen, click on the *SCSI Identification* tab.

The SCSI Identification tab panel appears.

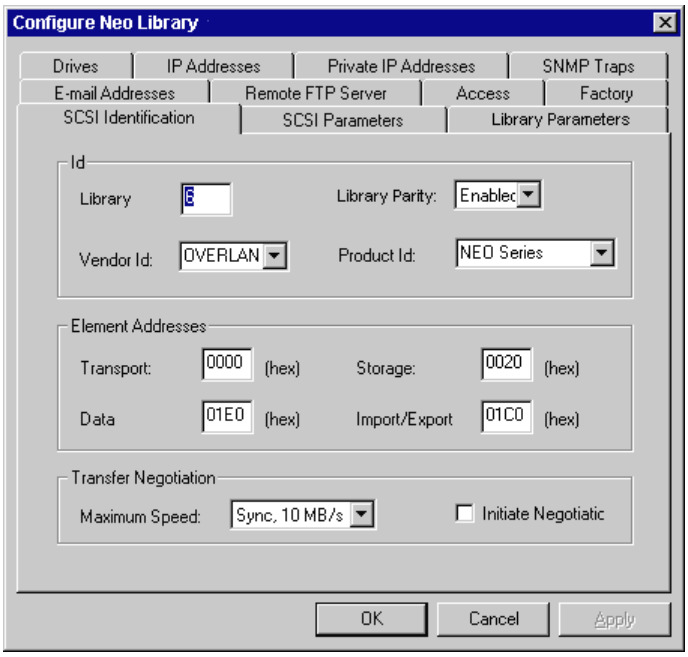


Figure 7–9. Configure Dialog Box - SCSI Identification

3) Click *OK* (if you have completed all configuration settings) to accept the settings. Clicking *OK* exits you from the configuration screen. Refer to the "Exiting The Configuration Menu" section later in this chapter.

NOTE: For a complete description of the above selectable options, including default options, see Chapter 3 "Library Configuration".

Library Parameters

1) Establish communications with the Neo Library, if not already established.
2) On the Configure Neo Library screen, click on the *Library Parameters* tab.

The Library Parameters tab panel appears.

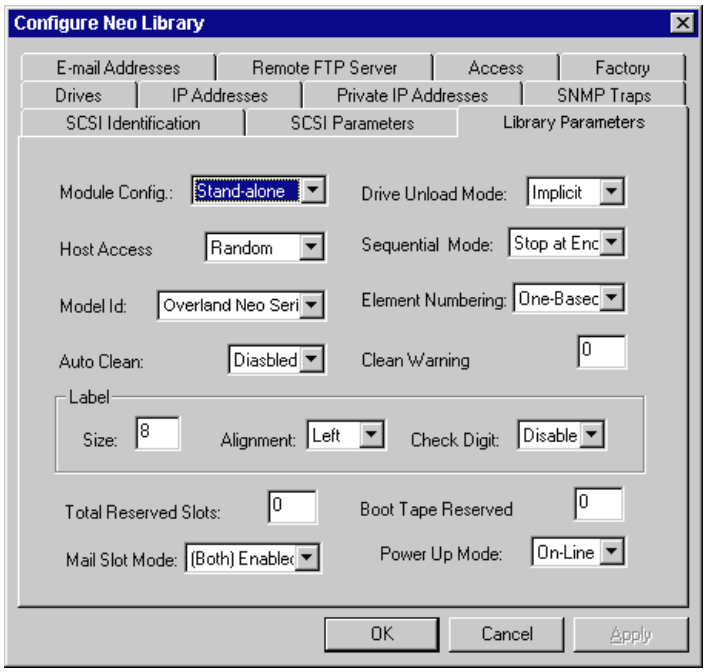


Figure 7–10. Configure Dialog Box - Library Parameters

3) Click *OK* (if you have completed all configuration settings) to accept the settings. Clicking *OK* exits you from the configuration screen. Refer to the "Exiting The Configuration Menu" section later in this chapter.

NOTE: For a complete description of the above selectable options, including default options, see Chapter 3 "Library Configuration".

Drives

1) Establish communications with the Neo Library, if not already established.
2) On the Configure Neo Library screen, click on the *Drives* tab.

The Drives tab panel appears.

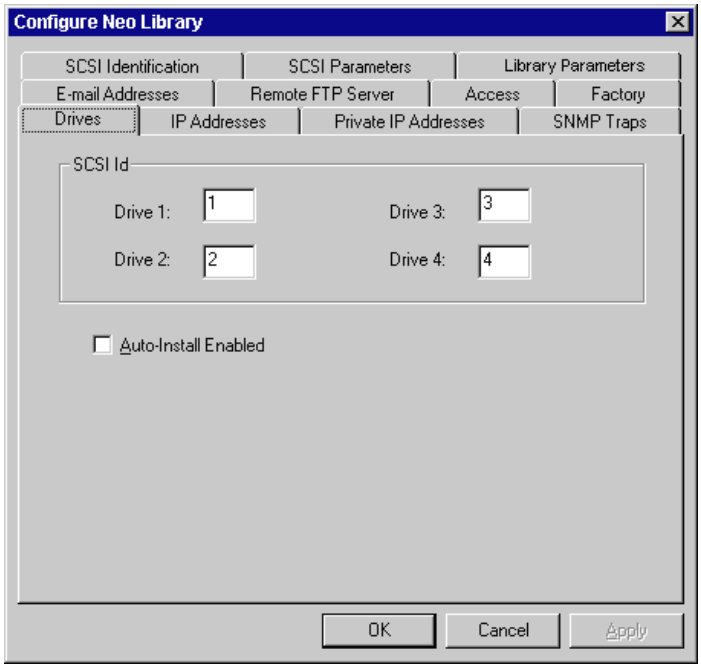


Figure 7–11. Configure Dialog Box - Drives

3) Click *OK* (if you have completed all configuration settings) to accept the settings. Clicking *OK* exits you from the configuration screen. Refer to the "Exiting The Configuration Menu" section later in this chapter.

Exiting The Configuration Menu

To exit the configuration menu:

1) On the *Configure* Screen, click on OK.

The Exit Configuration Menu Conformation prompt appears:

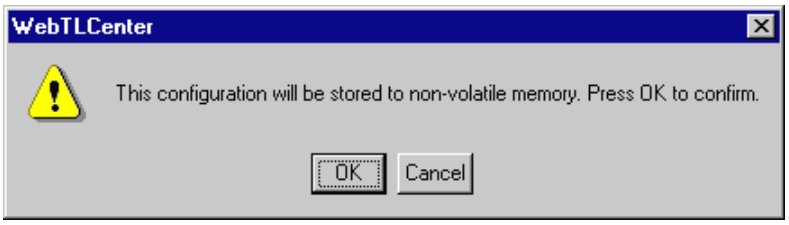


Figure 7–12. Exit Configuration Menu Conformation

2) Click OK.

3) A confirmation screen appears stating “Flash Programming Was Successful appears:

Figure 7–13. Flash Programming Successful

4) Click OK

The configuration screen disappears, leaving the Main NeoCenter screen displayed.

Uploading Data

NeoCenter lets you upload binary data files containing system trace information for diagnostic troubleshooting. Uploads also let you view the current unit configuration.

The Upload dialog creates binary files that you can save. The utility also includes a post-processor that lets you convert files into human-readable form, using the text editor of your choice.

Upload data from Web TLC using NeoCenter:

1) Establish communications with the Neo Library, if not already established.

2) On the Main screen, select *Upload*.

The Upload Data From Neo Library prompt appears:

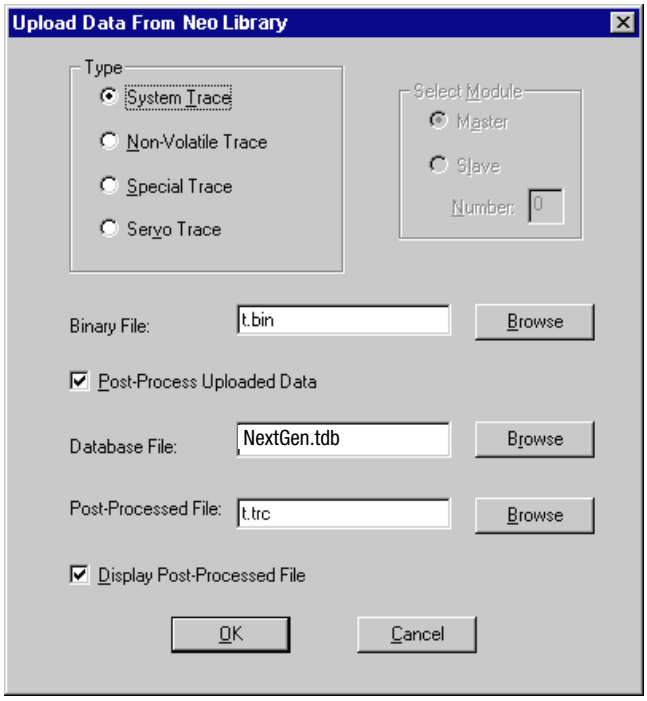


Figure 7–14. Upload Data From Neo Library Prompt

3) Click on the button for System Trace or Non-Volatile Configuration.

4) Click on the Browse button to select a network destination for the uploaded binary file.

The default file name appears in the Binary File field at the end of the network path. (You can insert the cursor in the field to rename the file if you wish.)

5) To create a text version of the file, click on the Post-Process Upload Data checkbox.

6) Use the associated Browse button to select NexGen.tdb in the Database File field. (This file is necessary to decode the uploaded file into text.)

7) Use the associated Browse button to select a destination for the text file.

The default file name appears in the Post-Processed File field at the end of the specified network path. You can insert the cursor in the field to rename the file if you wish.

8) Click *OK* to start the upload.

An Upload Progress screen momentarily appears, displaying a percent complete bar. When the upload is complete, your selected text editor application launches and displays the text version of the file.

Downloading Data

The firmware in Neo is resident in flash memory. Overland Storage periodically updates this code with enhancements. The NeoCenter utility lets you remotely download Flash Image files that contain this updated firmware.

The download process takes place in two stages. First, the data downloads into RAM and its checksum is verified. Second, it is programmed into the flash memory.

To download new firmware using NeoCenter:

1) Establish communications with the library, if not already established.
2) On the Main screen, select *Download*.

The Download Data to Neo Library prompt appears:

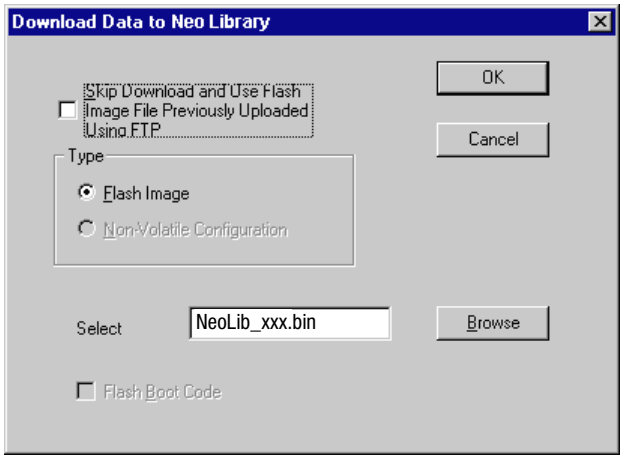


Figure 7–15. Download Data to Neo Library Prompt

3) Use the browser to display the firmware binary image file you want to download in the Select box.
4) Click *OK*.

A Download Progress screen appears. The screen displays a percent bar that tracks the process of the download into RAM and its checksum is verified.

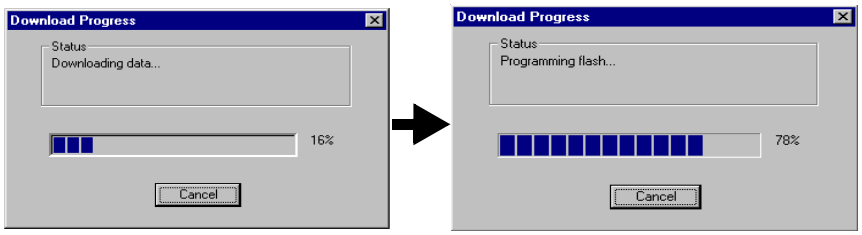


Figure 7–16. Download Progress Sequence

When the download ends, another percent progress screen immediately appears. It tracks valid flash programming. When the programming is complete and the NeoCenter is rebooting, a confirmation screen appears:

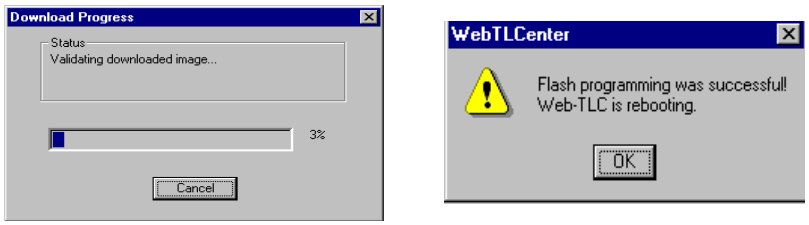


Figure 7–17. Download Progress Sequence (Cntd)

5) Click *OK* to return to the Main screen.

NOTE: If flash programming does not complete, check all cable connections and repeat download steps (1) through (5). If the download fails to complete a second time, contact Overland Storage Technical Support.

Rebooting The Unit Using The Neo Center Utility

1) Establish communications with the library, if not already established.
2) From the Diag menu, select the *Reboot* NeoCenter option.

A confirmation screen appears, asking if you're sure you want to reboot.

3) Click on the *Yes* button.

A progress screen appears, with a percent bar that tracks the reboot process.

4) Click OK.

The unit will be disconnected for approximately five seconds.

Library Partitioning

NOTE: Partition Controller Card(s) must be properly installed and correctly cabled before partitioning is available. See Appendix D "Partitioning Controller Card Installation" or the Library Partitioning Controller Card Quick Install for installation instructions.

1) Turn on power.
2) Verify connection the RJ11-DB9 cable between the connector labeled RS232 on the Neo Series Library and a COM port on the host computer. (Note which port you select.)
3) Power up the host computer, and boot into Windows 95, 98, 2000 or NT 4.0.
4) Install the NeoCenter utility from the included CDRom.

5) Download Flash Image file that contains the required firmware to configure partitions from the included CDRom. See Downloading Data for the downloading procedure in this chapter.

NOTE: The NeoCenter utility from the included CDRom and the Partitioning Firmware must be downloaded to configure partitions and enable Library Partitioning.

6) Launch the NeoCenter utility.

The NeoCenter Main screen is displayed:

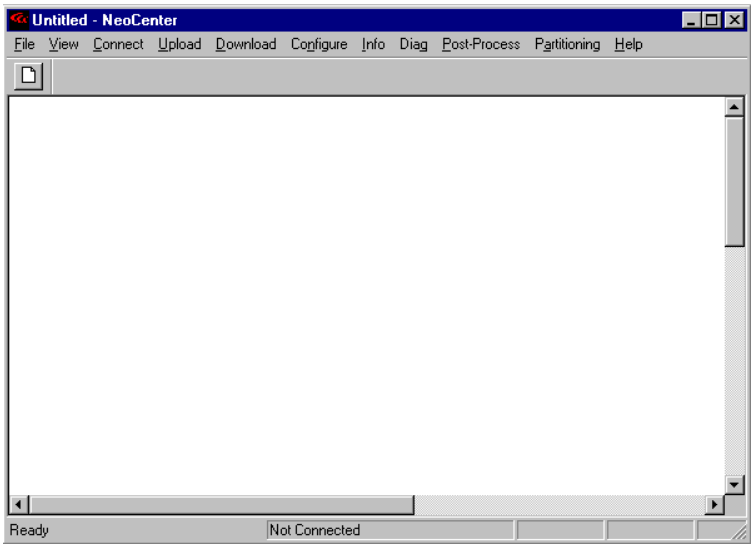

Untitled - NeoCenter
File View Connect Upload Download Configure Info Diag Post-Process Partitioning Help
Ready
Not Connected

Figure 7–18. NeoCenter Default Screen

7) Click *Connect*.

The Serial Port Setting screen is displayed:

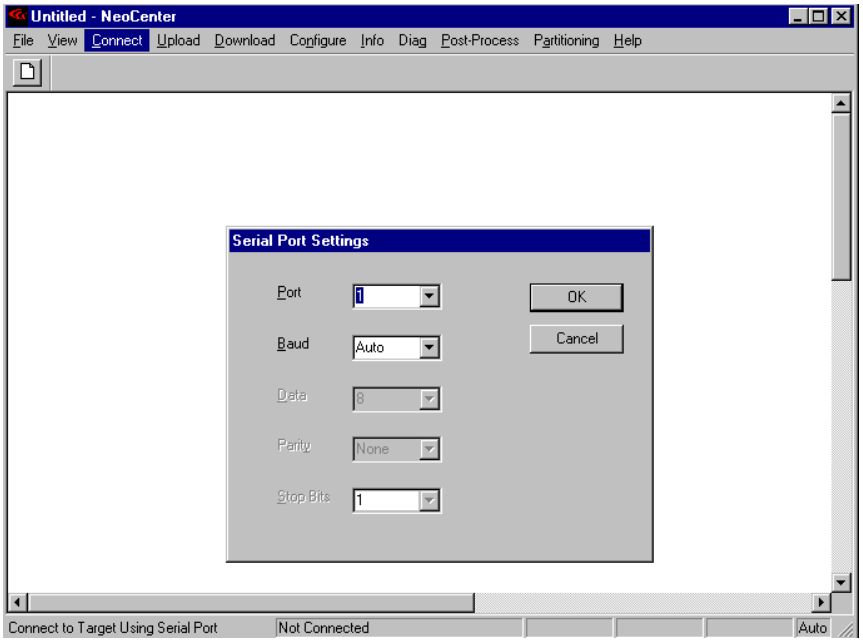


Figure 7–19. Serial Port Settings Pop-Up

8) Verify settings of the Com port and click *OK*.

"Connecting" varifying status screen displays:

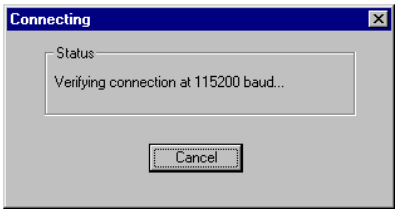


Figure 7–20. Connection Status

NOTE: If the connection is not successful, check all cable connections and repeat steps (7) and (8). If communication with the Library fails again, contact Overland Storage Technical Support.

9) Click the *Partitioning* drop-down menu.

NOTE: On the Partitioning drop-down menu, note that the partitioning options are currently not available. Options become available when Enable is selected.

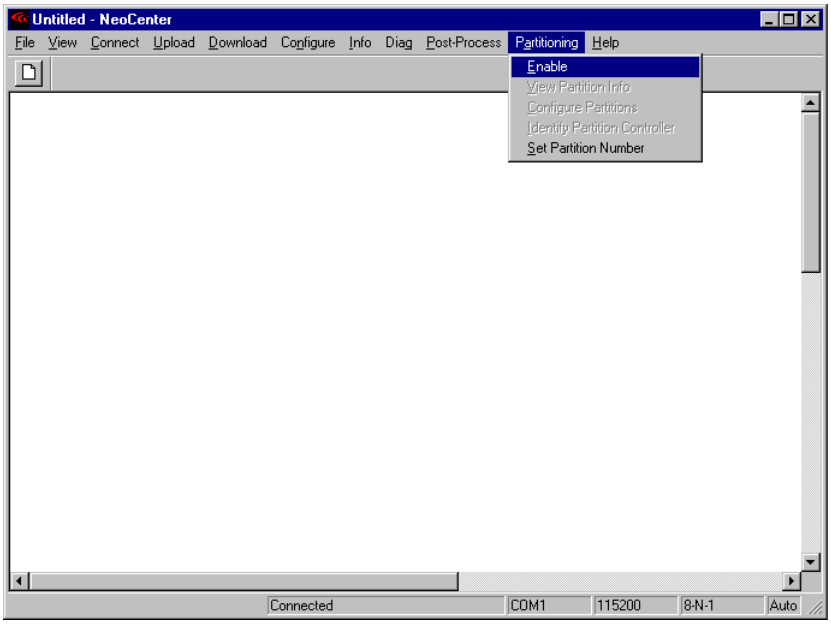


Figure 7–21. Partitioning Drop-down Menu

10)Click *Enable*.

"Upload Process" messsage is displayed:

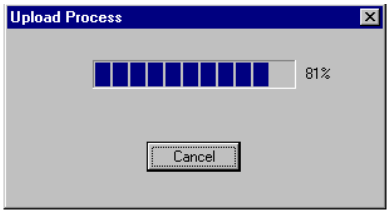


Figure 7–22. Upload Process Message

Enable partitioning message is displayed:

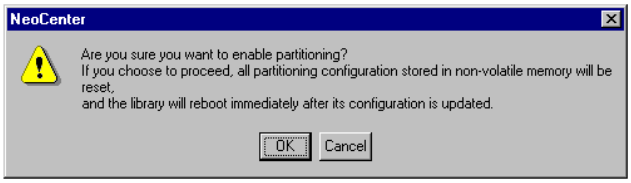

NeoCenter
Are you sure you want to enable partitioning?
If you choose to proceed, all partitioning configuration stored in non-volatile memory will be reset,
and the library will reboot immediately after its configuration is updated.
OK
Cancel

Figure 7–23. Enable Partitioning Message

Stored to Non-Volatile Memory message is displayed:

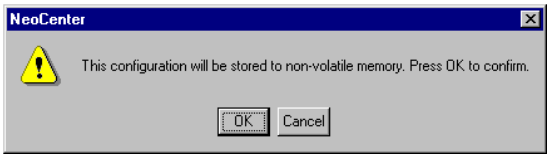


Figure 7–24. Stored to Non-Volatile Memory Message

11)Click *OK*.

"Download Progress" message is displayed followed by "Flash programming was successful!"

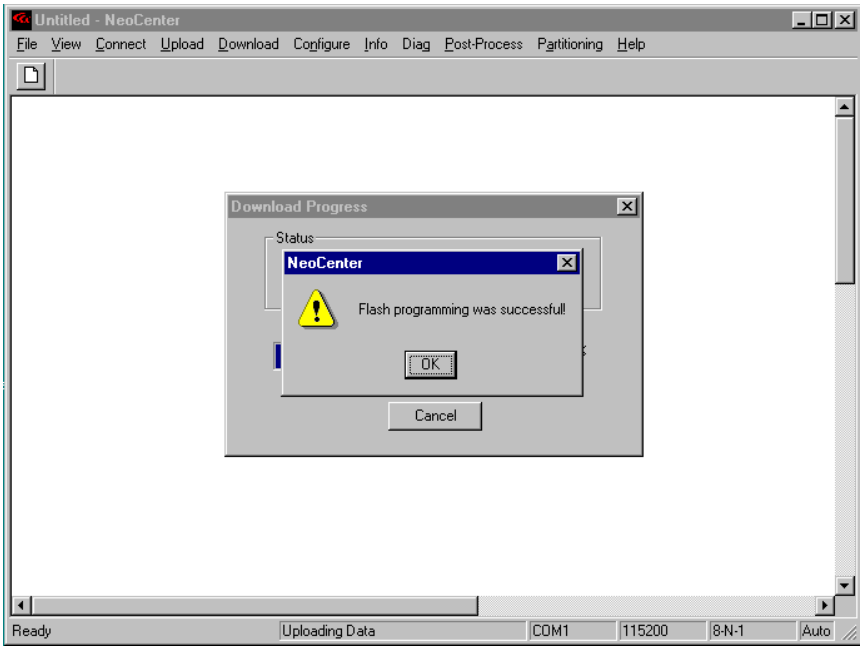


Figure 7–25. Flash Programming Successful Message

12)Click *OK*.

The NeoCenter “Library is rebooting” message appears and the library performs a full reboot.

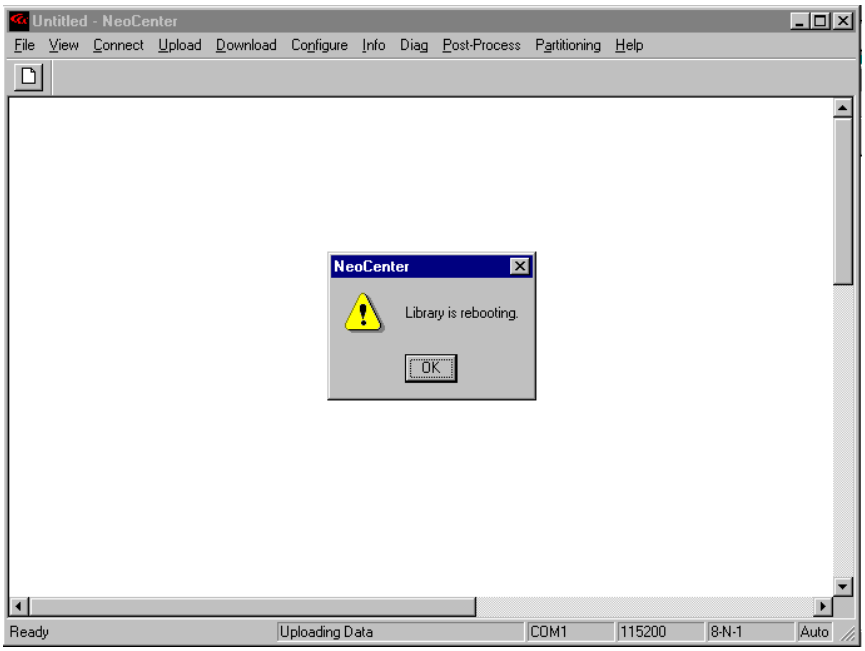


Figure 7–26. Library is Rebooting Message

NOTE: Whenever a reboot occurs or is initiated, Connect must be selected to re-establish communication.

13)Click *OK*.

14)Click *Connect*.

15)Open the *Partitioning* dropdown menu and select *Configure Partitions*.

“Upload Process” messsage is displayed:

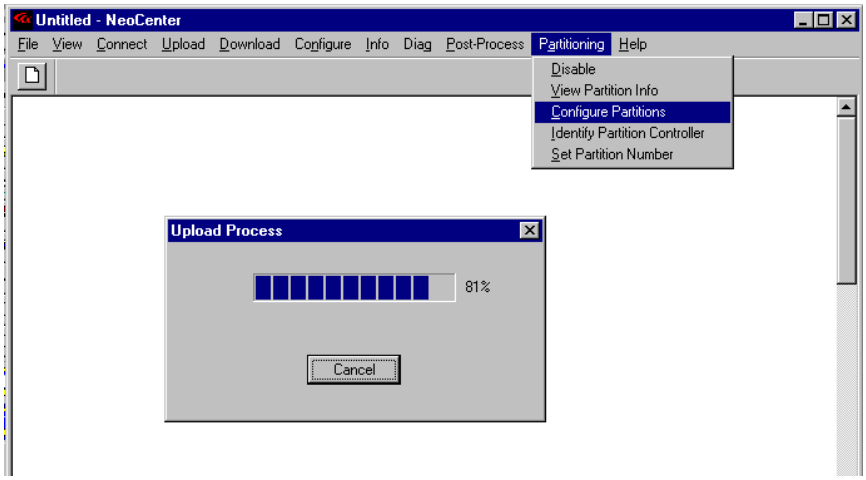


Figure 7–27. Configure Partitions Upload Message

Partition configuration screen is displayed:

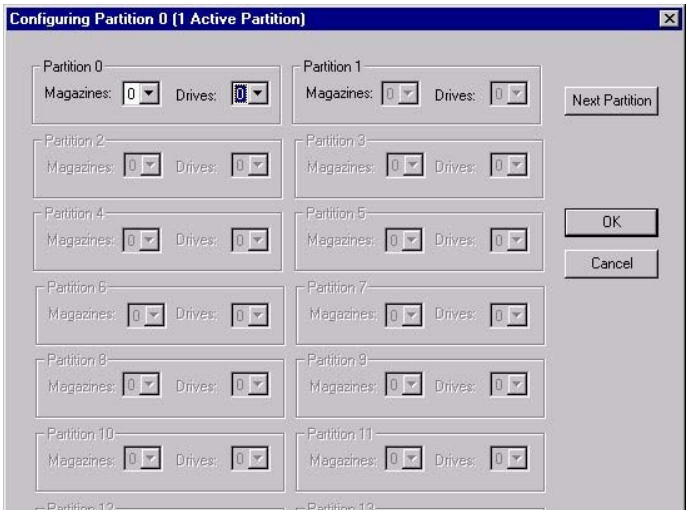


Figure 7–28. Partition Configuration Screen

16)Configure desired partitions.

Partitions are configured by selecting the magazine and drive drop-down windows. In the below example, two Partition Controller Cards and two drives are available. To configure a new partition (if available), simply click the “Next Partition” button. In the example, both partitions were configured with the available one magazine and one drive.

17)When partition configuration is completed click *OK*.:

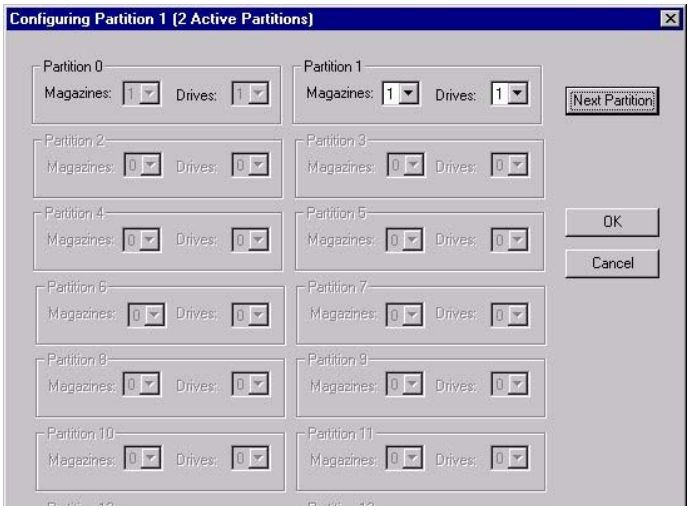


Figure 7–29. Partition Configuration Screen

18)The “Review Configuration” screen is displayed:

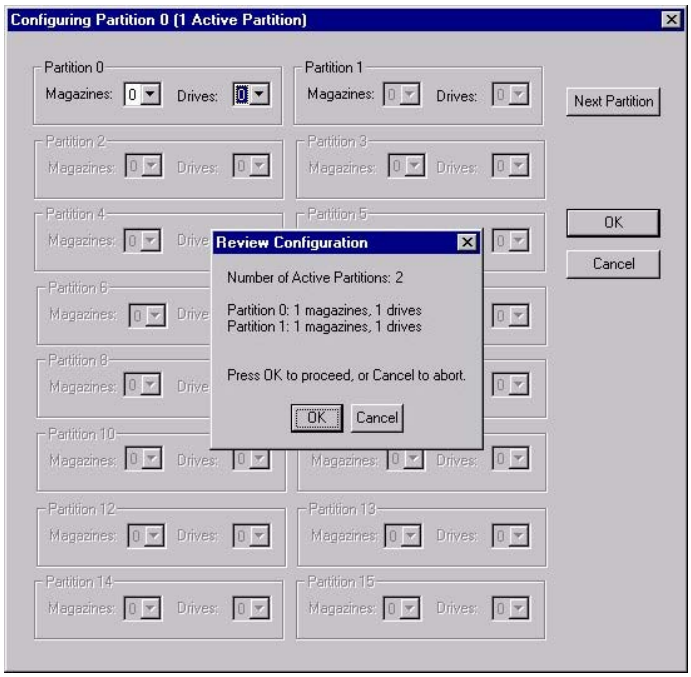


Figure 7–30. Review Configuration Screen

19)Verify your partition settings and click *OK*.

“Stored to Non-Volatile Memory” message is displayed:

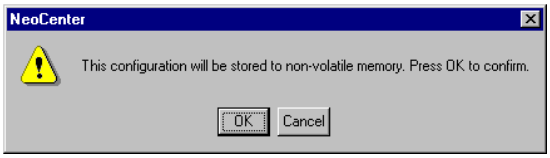


Figure 7–31. Confirmation Message

20)Click *OK*

"Download Progress" message is displayed followed by "Flash programming was successful!":

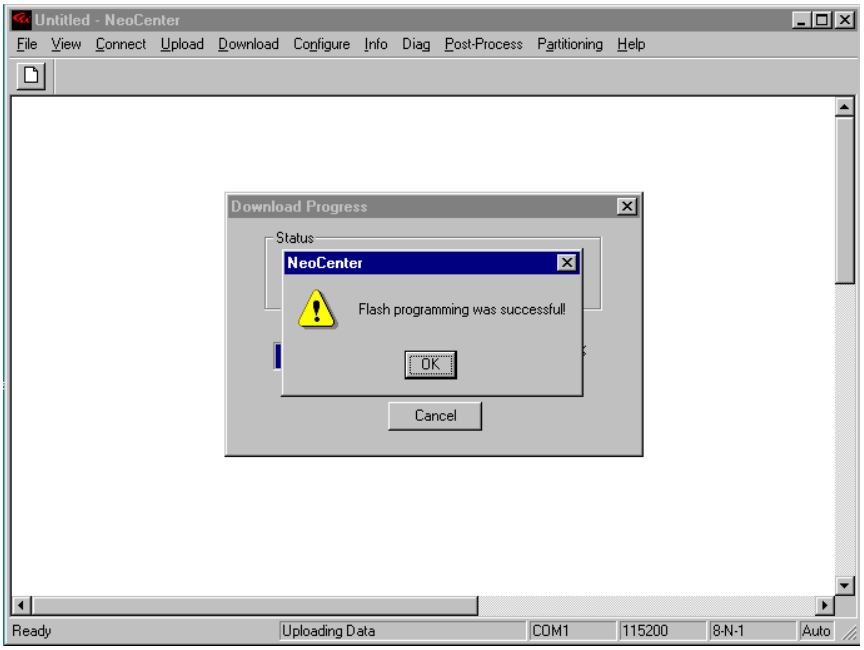


Figure 7–32. Download Progress Message

21)Click *OK*.

The NeoCenter "Library is rebooting" message appears and the library performs a full reboot:

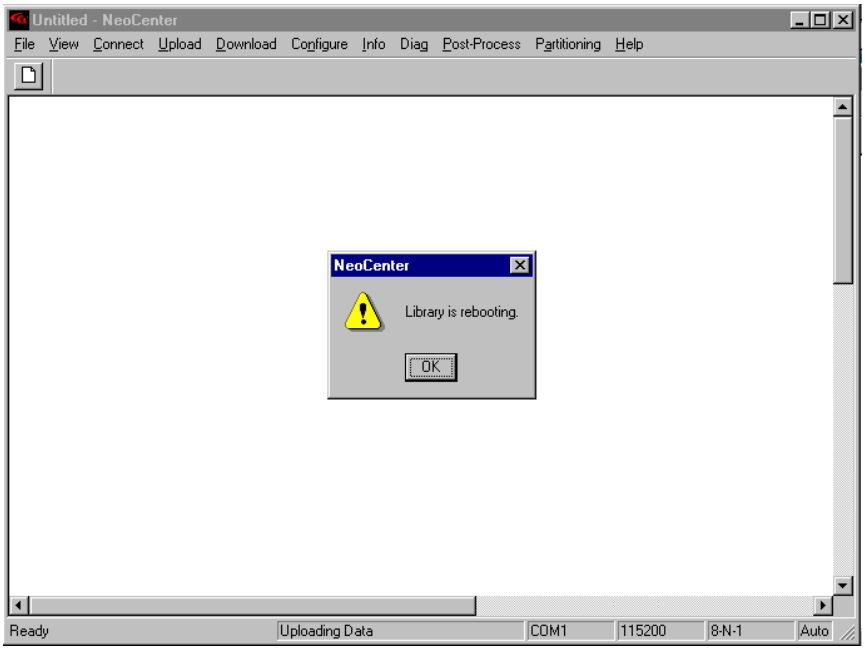


Figure 7–33. Library is Rebooting Message

22)Click *OK*.

Partitioning Submenus

In addition to the Configure Partitions submenu, there are other menus:

- Disable Partitioning - Enables you to disable the partitioning functions of your library. When disable is selected all partitions (including within multi-module libraries), no longer function and the library returns to the default configuration previously used. The library must be rebooted for changes to take effect.
- View Partition Info - Allows you to view the current status of configured partitions. Information available shows if partitoning is enabled, the number of active partitions, and the configuration of each partition number. Each partition line displays the partition number, the number of magazines (uncluding bins and /or mailslots) in each partition and the number of drives in each partition.
- Identify Partition Controller - Physically associates a partition number with the controller card that controls it. When this function is selected the controller card for the partition number selected is easily identified by a flashing green LED at the bottom of the Partition Controller Card at the back of the library.
- Set Partition Number - Enables you to change the partition number by assigning the desired number to a target controller via NeoCenter.

Disable Partitioning

1) Launch NeoCenter
2) Select *Connect*.
3) Select the *Partitioning* drop-down menu.
4) Click Disable

"Upload Message" is displayed:

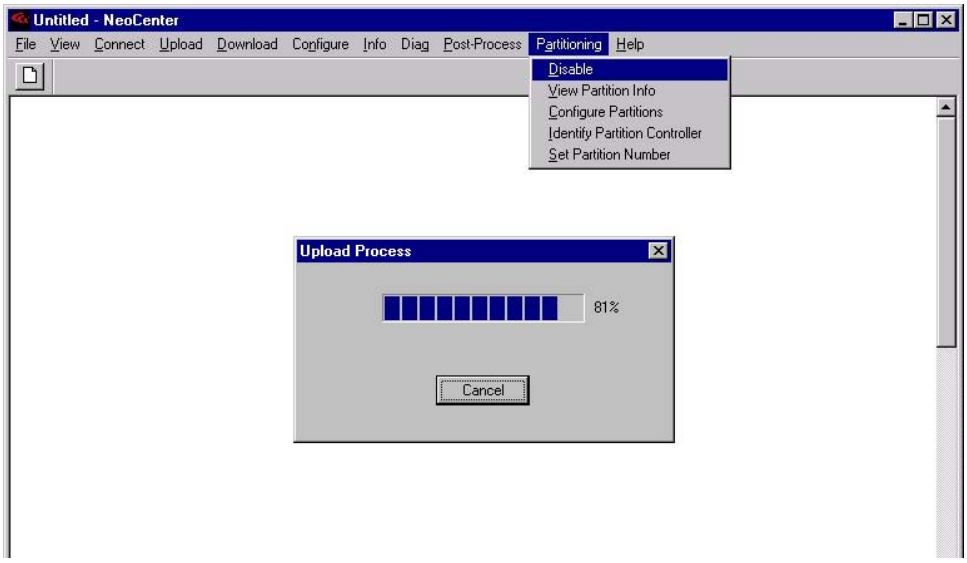


Figure 7–34. Disable Submenu

The "Disable Partitioning" message is displayed:

NeoCenter
Are you sure you want to disable partitioning?
If you choose to proceed, the library will reboot immediately after its configuration is updated.
OK
Cancel

Figure 7–35. Disable Partitioning Message

5) Click *OK*.

"Stored to Non-Volatile Memory" message is displayed:

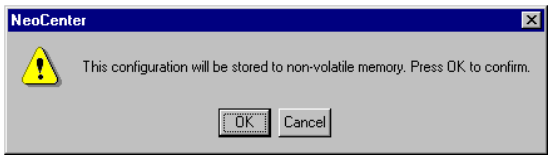


Figure 7–36. Stored to Non-Volatile Memory Message

6) Click *OK*.

"Download Progress" message is displayed followed by "Flash programming was successful!":

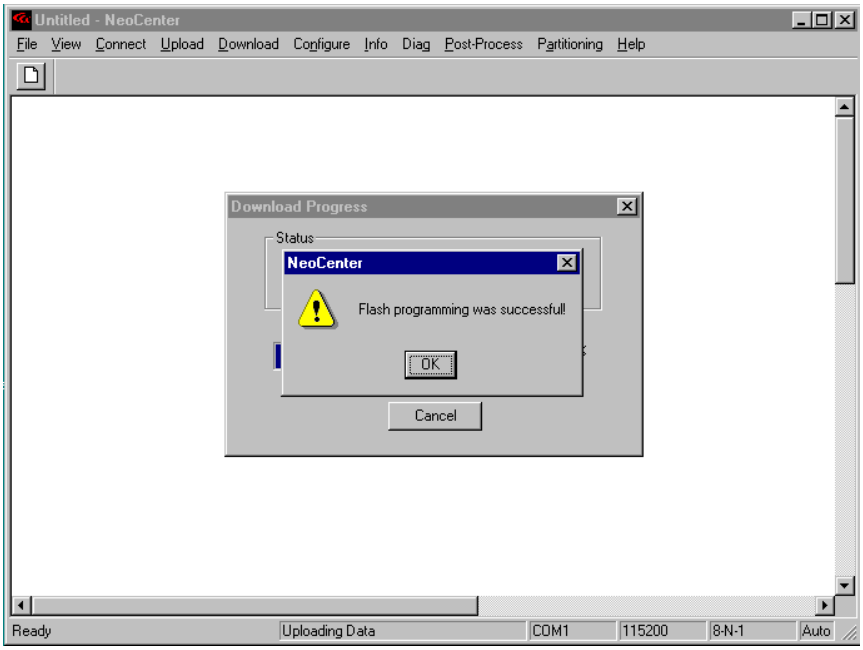


Figure 7–37. Download Progress Message

7) Click *OK*.

The NeoCenter “Library is rebooting” message appears and the library performs a full reboot.

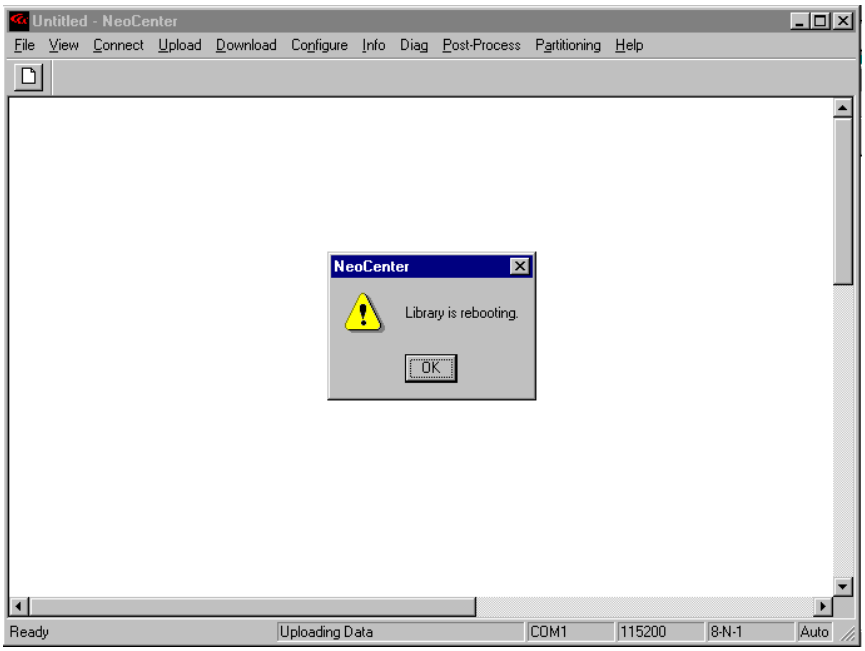


Figure 7–38. Library is Rebooting Message

8) Click *OK*.

View Partition Info

1) Select the Partitioning drop-down menu.
2) Click View Partition Info

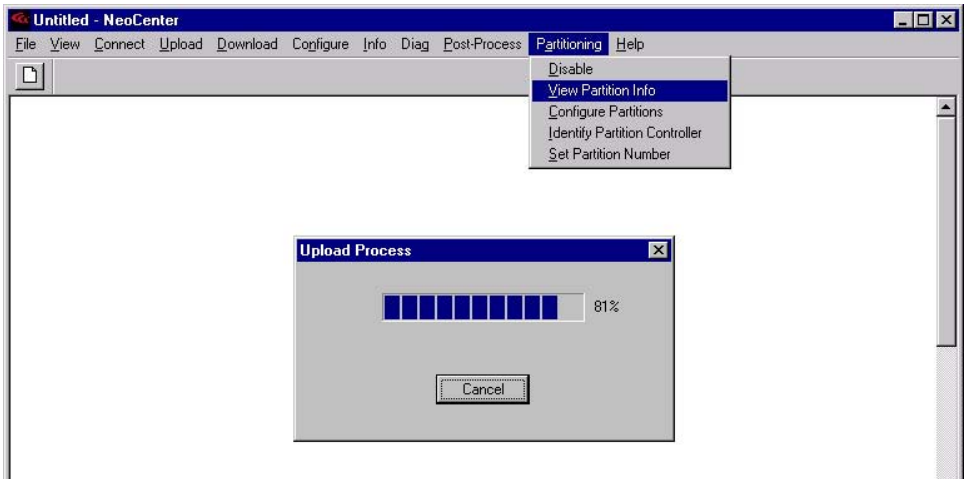


Figure 7–39. View Partition Info Selected

The information screen is displayed:

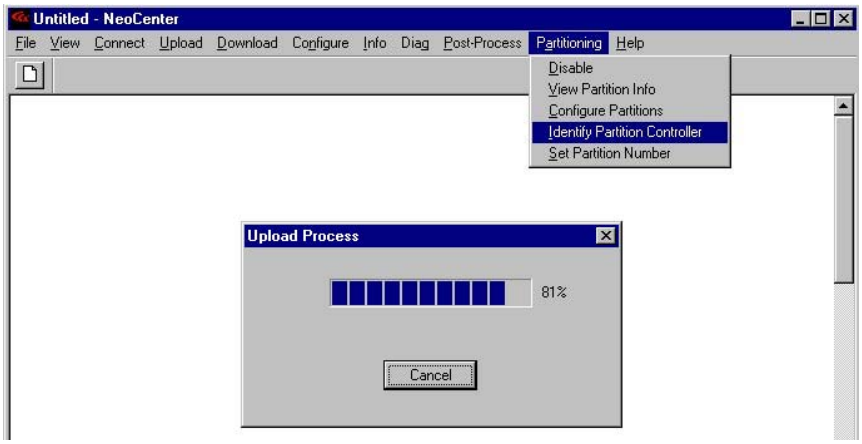
Partitioning Info
Partitioning is enabled.
Number of Active Partitions: 2
Partition 0: 1 magazines (14 bins, 1 mail slots), 1 drives
Partition 1: 1 magazines (15 bins, 0 mail slots), 1 drives
OK

Figure 7–40. Partitioning Info Screen

3) Click *OK*.

Identify Partition Controller

1) Select the Partitioning drop-down menu.
2) Click Identify Partition Controller.



The partition identification selection screen is displayed.

3) Select the desired partition number from the Partition Number drop-down menu

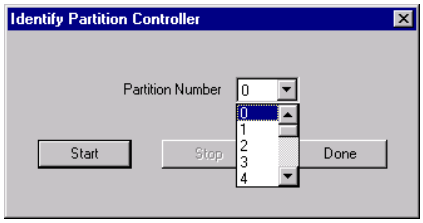


Figure 7–41.

4) Click *Start*.

The partition identification information message is displayed:

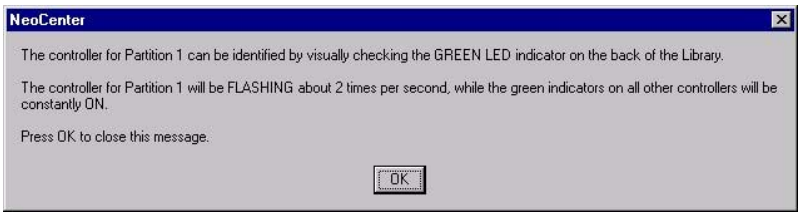

NeoCenter
The controller for Partition 1 can be identified by visually checking the GREEN LED indicator on the back of the Library.
The controller for Partition 1 will be FLASHING about 2 times per second, while the green indicators on all other controllers will be constantly ON.
Press OK to close this message.
OK

Figure 7–42. Partition ID Info Screen

5) Click *Stop* if you wish to identify more partitions. When stop is selected *Partition Number* and Start are enabled to select additional partitions.

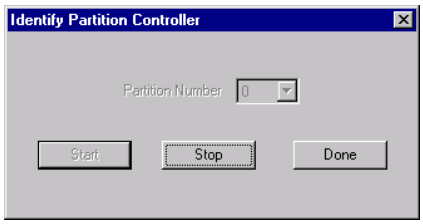


Figure 7–43. Stop or Done Option

6) Click *Done* when you wish to exit.

Set Partition Number

This NeoCenter option enables you to specifically assign a partition number to a particular Partition Controller card. A Partition Controller that has been named with this option will remain that number unless it is set to a new partition number.

1) Connect the RJ11-DB9 cable between the connector labeled RS232 on the desired partition controller to be numbered and a COM port on the host computer with NeoCenter software.

NOTE: In most instances or in previously configured systems, remove the RS232 connection from the Master Library plug it into the desired partition controller to be numbered.

2) Launch the NeoCenter Utility.
3) Select Connect
4) Select the Partitioning drop-down menu.
5) Click Set Partition Number.

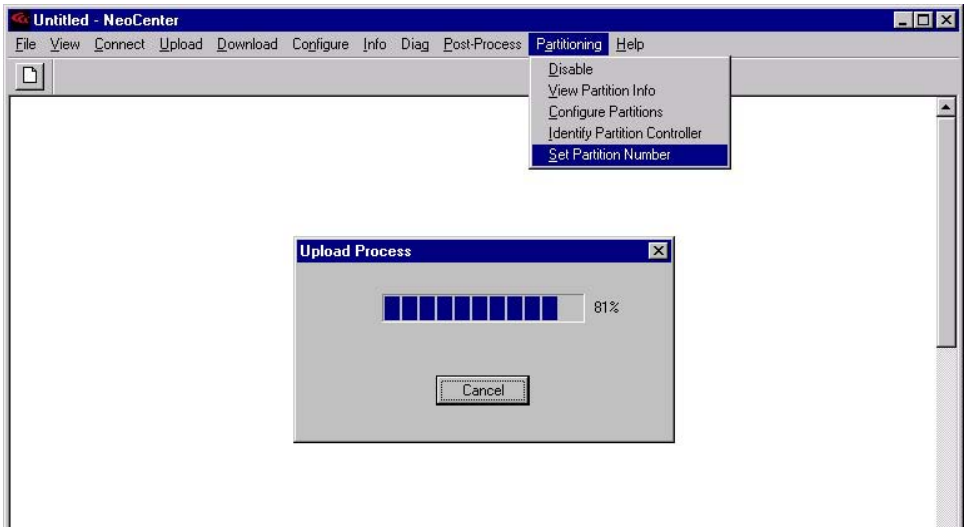


Figure 7–44. Set Partition Number

6) Repeat the above steps for each partition number to be assigned.

Chapter 8 Web TLC

Introduction

Web TLC - Total Library Control - is a remote interface device built into your Neo Series Library Module, that can be connected to your LAN. It lets you monitor and control your automated tape library from any terminal connected to your network or via the World Wide Web. The Web TLC hosts a dedicated, protected Internet site that displays a graphical representation of your library. This internet site can be accessed using either Microsoft Internet Explorer (3.0 or higher) or Netscape (3.0 or higher). Web TLC shows you overall status at a glance and presents a control panel for making adjustments and viewing details down to the cartridge level.

In order to use Web TLC, you must have the following available:

- A 10 BaseT Ethernet Network
- A Dedicated IP Address (either Internet or local)
- A Host computer with COM port (initial setup and alternative maintenance procedures only)
- A computer with a Web Browser installed that has access to your network.

Two Separate Configurations For Web TLC Available:

- World Wide Accessible

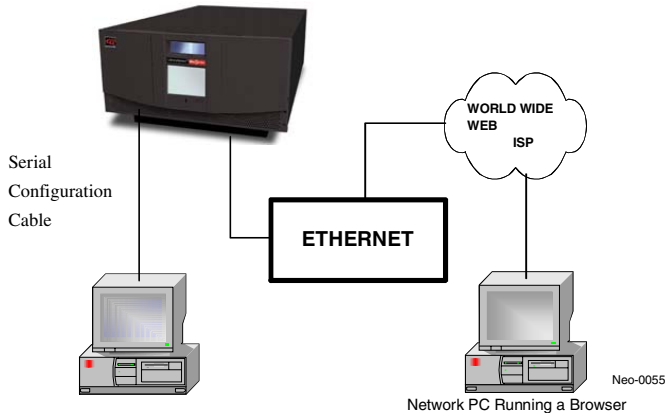


Figure 8–1. World Wide Web Accessible

- Local Area Network

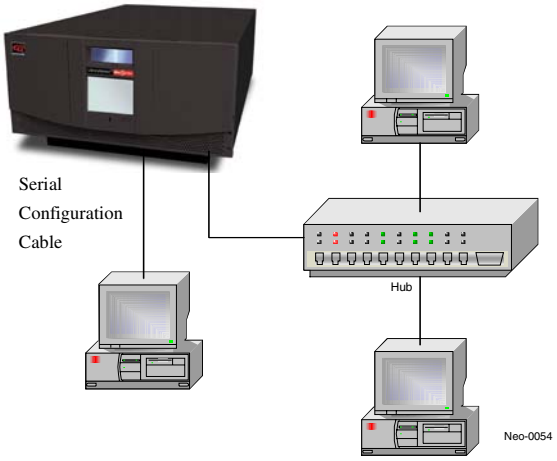


Figure 8–2. Local Area Network

Operation

This section also explains extended or enhanced functionality that is available on Web TLC but not always found on deployed hardware systems. To configure Web TLC you must set the IP addresses, see, "Setting IP addresses" located in Chapter 7, or utilize NETWORK OPTIONS on the GUI.

With Web TLC configuration complete, you can now exercise Total Library Control from a remote host. This section does not contain an exhaustive presentation of control concepts and instructions. These are provided in previous chapters of this manual. It assumes that you are familiar with the hands-on control panel operations of your automated tape handling equipment.

It does, however, provide an overview of the web browser-based controls that map familiar control panel functions into their graphical counterparts in an intuitive, easy to learn way.

Web TLC Access

To access Web TLC:

NOTE: The library must be in the ready mode to establish communications with the Web TLC. If unable to access the unit with your browser, verify the library is not being operated locally.

1) Type the Web TLC IP address in the Location field of your Internet browser, and press the Enter key.

The browser connects to Web TLC and displays the login prompt:

Login to the Web TLC
Check to prevent other users from initiating any "Level 2" operations with the Library for the duration of your session.
Check to disable frames.
Enter a Password:
Login

Figure 8–3. Web TLC Login Prompt

1) Enter your level 1 or level 2 Password in the appropriate field and Click OK. The Web TLC Control Panel page appears with the Status screen displayed.

Figure 8–4. Web TLC Control Panel

Status

Click the *Status* button to view a display of itemized status information for the library in general and for each drive. Scroll down to view additional information. You can configure two browser settings from this screen:

1) **Auto refresh**: off / 1 min / 2 min / 5 min

This setting ensures the status of your library displayed on the browser remains current.

2) **Inventory Display**: Logical / Physical

This setting enable you to display your library either logically (drives and slots are grouped separately) or physically (drives and slots are grouped by library module), depending on your preference.

Information available from this screen:

- Library Status
- Drive Status (Summary)
- Full Drive Status is available through the Full Drive Status button.

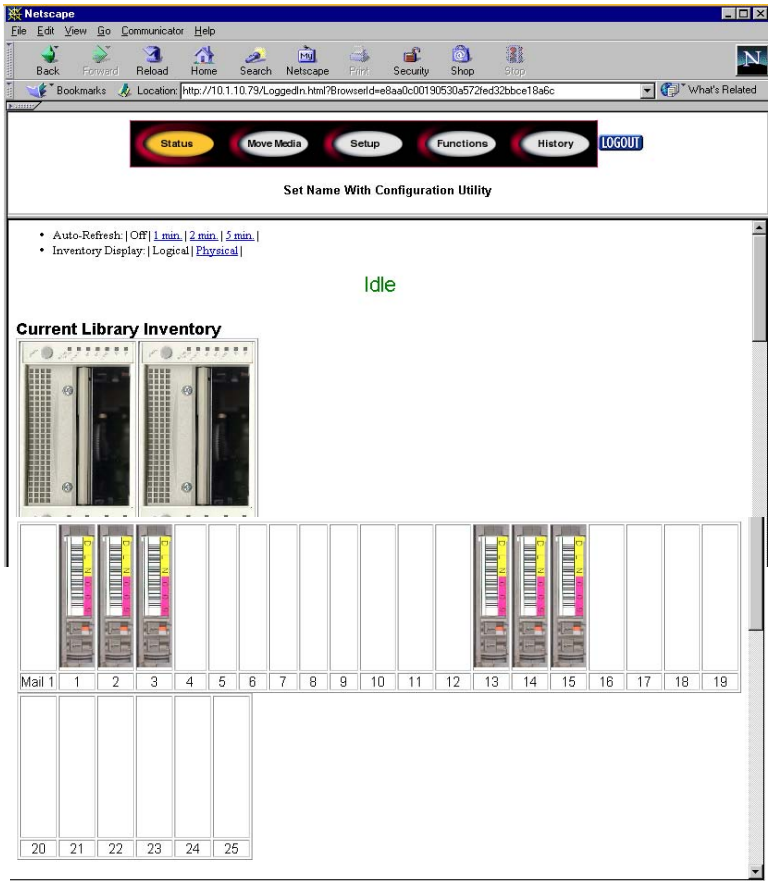

Netscape
File Edit View Go Communicator Help
Back Forward Reload Home Search Netscape Print Security Shop Stop
Bookmarks Location: http://10.1.10.79/LoggedIn.html?BrowserId=e8aa0c00190530a572fed32bbce18a6c What's Related
Status
Move Media
Setup
Functions
History
LOGOUT
Set Name With Configuration Utility
Auto-Refresh: | Off | 1 min. | 2 min. | 5 min. |
Inventory Display: | Logical | Physical |
Idle
Current Library Inventory
Mail 1 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
20 21 22 23 24 25

Figure 8–5. Web TLC Status Option

Move Media

CAUTION: Do not move tapes while Library Applications Software is running. Fatal software faults may occur!

This button allows you move a selected cartridge to a target drive or cartridge slot using the display shown below:

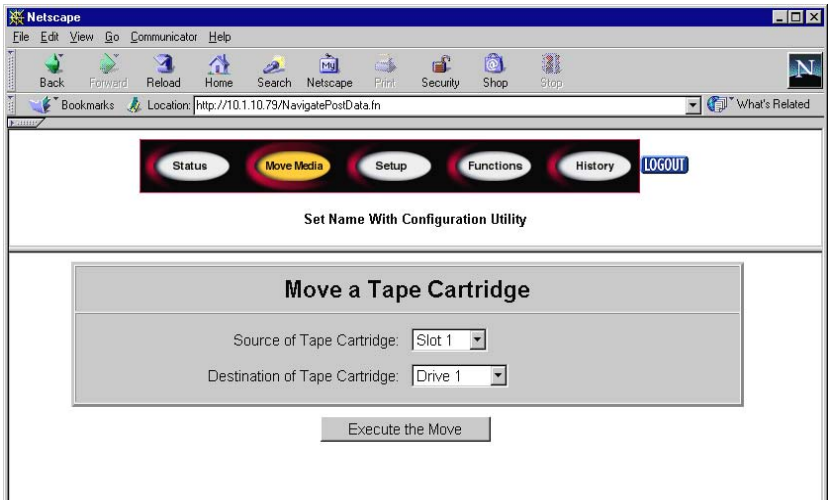

Netscape
File Edit View Go Communicator Help
Back Forward Reload Home Search Netscape Print Security Shop Stop
Bookmarks Location: http://10.1.10.79/NavigatePostData.fn What's Related
Status Move Media Setup Functions History LOGOUT
Set Name With Configuration Utility
Move a Tape Cartridge
Source of Tape Cartridge: Slot 1
Destination of Tape Cartridge: Drive 1
Execute the Move

Figure 8–6. Web TLC Move Media Option

1) Specify the source slot and destination.
2) Click the “execute the move” bar to effect the move.
3) A screen appears notifying the user that selecting confirm will cause the Library to go offline during the move media operation.
4) After the move media operation completes a completion message appears.

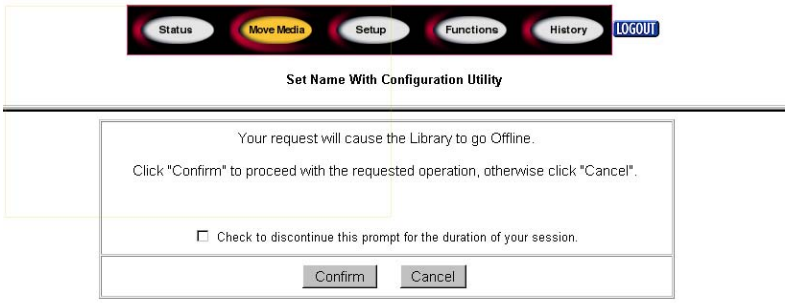

Status Move Media Setup Functions History LOGOUT
Set Name With Configuration Utility
Your request will cause the Library to go Offline.
Click "Confirm" to proceed with the requested operation, otherwise click "Cancel".
Check to discontinue this prompt for the duration of your session.
Confirm Cancel

Figure 8–7. Web TLC Move Media Confirm Select

Setup

Click Setup for button-and-browser controls that let you set the various configuration options. Select one of the configuration options from the menu to view or change parameters.

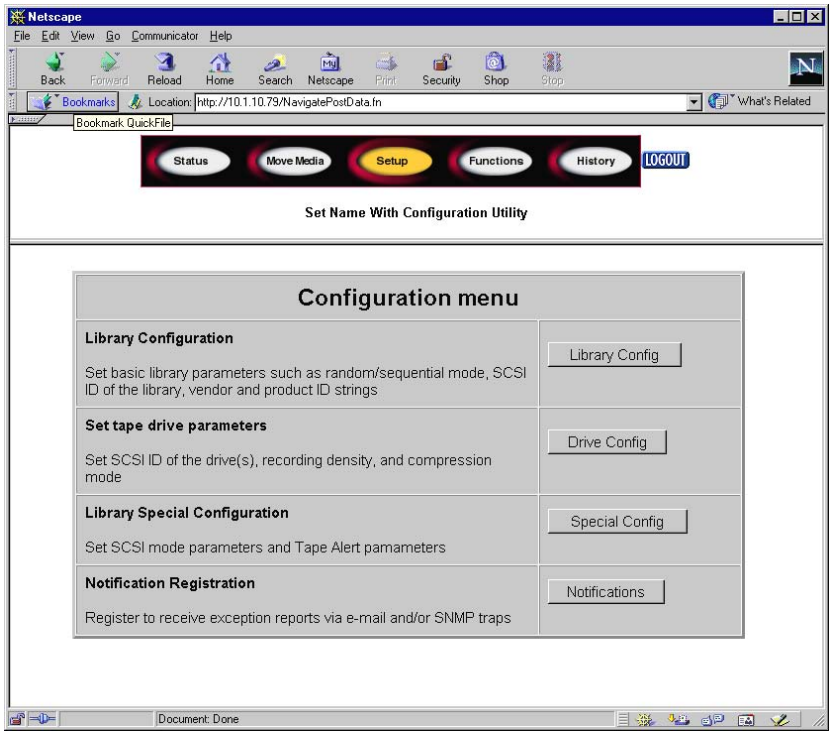

Netscape
File Edit View Go Communicator Help
Back Forward Reload Home Search Netscape Print Security Shop Stop
Bookmarks Location: http://10.1.10.79/NavigatePostData.fn What's Related
Bookmark QuickFile
Status
Move Media
Setup
Functions
History
LOGOUT
Set Name With Configuration Utility
Configuration menu
Library Configuration
Set basic library parameters such as random/sequential mode, SCSI ID of the library, vendor and product ID strings
Library Config
Set tape drive parameters
Set SCSI ID of the drive(s), recording density, and compression mode
Drive Config
Library Special Configuration
Set SCSI mode parameters and Tape Alert pamameters
Special Config
Notification Registration
Register to receive exception reports via e-mail and/or SNMP traps
Notifications
Document: Done

Figure 8–8. Web TLC SETUP Options

The settings correspond to those in the Configure Menu on the front control panel (GUI) of your library. See Figure 8–9.

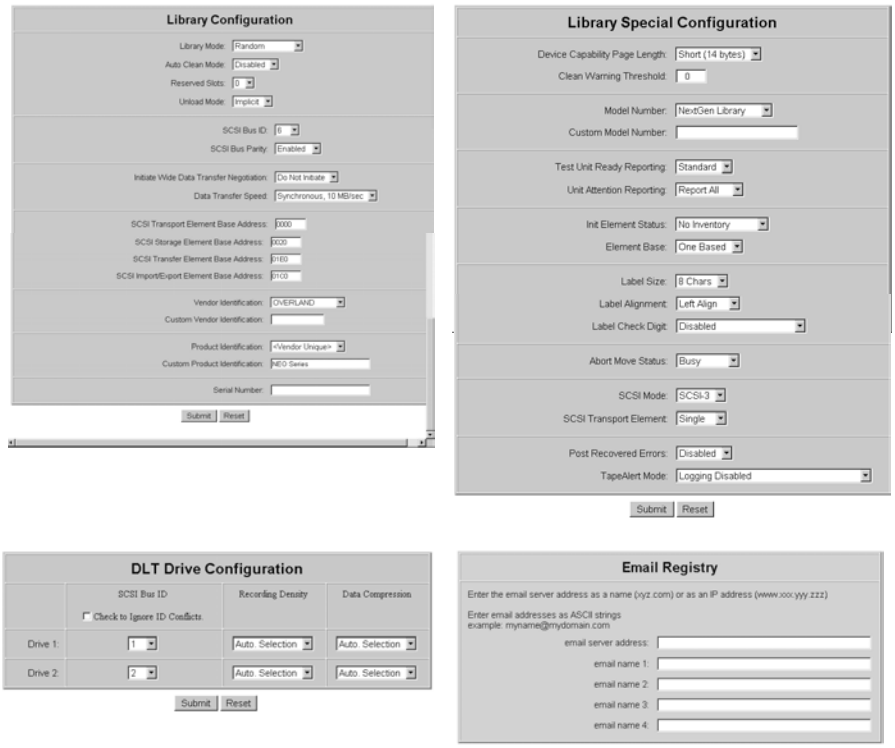

Library Configuration
Library Mode: Random
Auto Clean Mode: Disabled
Reserved Slots: 0
Unload Mode: Implicit
SCSI Bus ID: 6
SCSI Bus Parity: Enabled
Initiate Wide Data Transfer Negotiation: Do Not Initiate
Data Transfer Speed: Synchronous, 10 MB/sec
SCSI Transport Element Base Address: 0000
SCSI Storage Element Base Address: 0001
SCSI Transfer Element Base Address: 0E60
SCSI Import/Export Element Base Address: 0F00
Vendor Identification: OVERLAND
Custom Vendor Identification:
Product Identification: <Vendor Unique>
Custom Product Identification: NEO Series
Serial Number:
Submit Reset
Library Special Configuration
Device Capability Page Length: Short (14 bytes)
Clean Warning Threshold: 0
Model Number: NextGen Library
Custom Model Number:
Test Unit Ready Reporting: Standard
Unit Attention Reporting: Report All
Init Element Status: No Inventory
Element Base: One Based
Label Size: 8 Chars
Label Alignment: Left Align
Label Check Digit: Disabled
Abort Move Status: Busy
SCSI Mode: SCSI-3
SCSI Transport Element: Single
Post Recovered Errors: Disabled
TapeAlert Mode: Logging Disabled
Submit Reset
DLT Drive Configuration
SCSI Bus ID
Check to Ignore ID Conflicts.
Recording Density
Data Compression
Drive 1: 1 Auto Selection Auto Selection
Drive 2: 2 Auto Selection Auto Selection
Submit Reset
Email Registry
Enter the email server address as a name (xyz.com) or as an IP address (www.xxx.yyy.zzz)
Enter email addresses as ASCII strings
example: myname@mydomain.com
email server address:
email name 1:
email name 2:
email name 3:
email name 4:

Figure 8–9. Web TLC SETUP Configuration

Functions

The Functions pages present button-and-browser controls lists of selectable files. Scroll down for additional dialog boxes corresponding to the below functions

Functions available from this screen:

- Perform a Drive cleaning operations
- Perform a Free running library diagnostics
- Standard library diagnostics
- Drive flash operations
- Reset Web TLC
- Reset Library

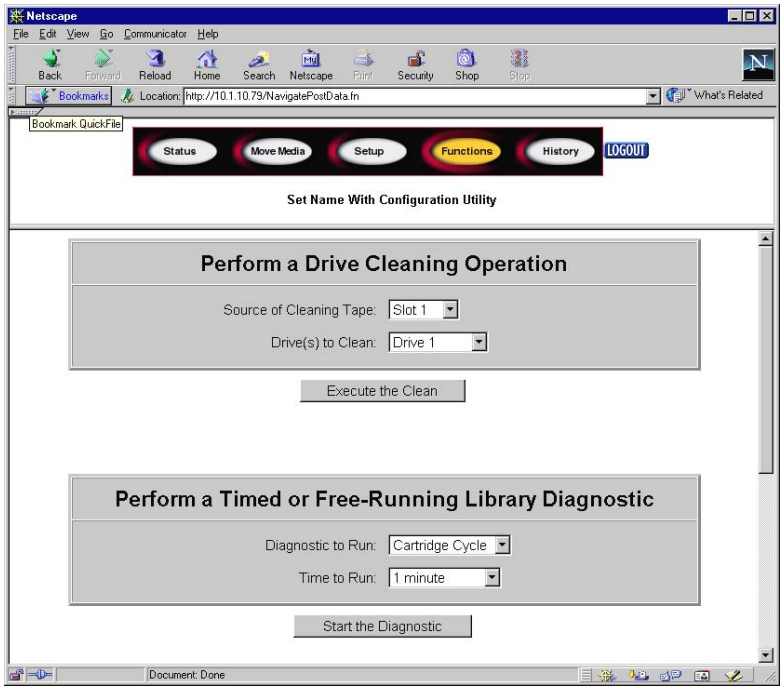


Figure 8–10. Web TLC Functions Option

History

Click this button to see lists of files that you can display or download. Scroll down for additional menus:

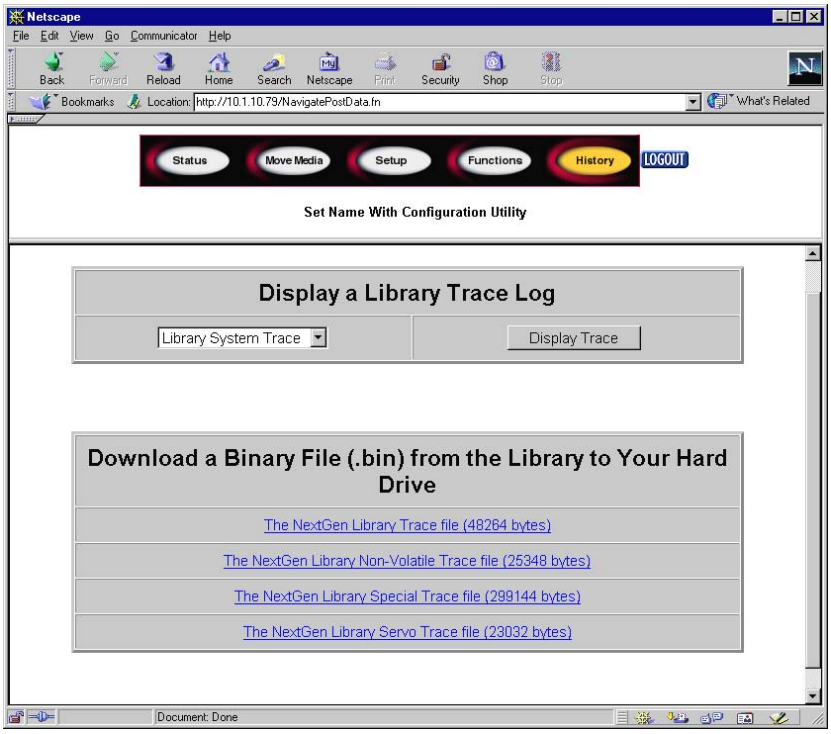

Netscape
File Edit View Go Communicator Help
Back Forward Reload Home Search Netscape Print Security Shop Stop
Bookmarks Location: http://10.1.10.79/NavigatePostData.fn
What's Related
Status
Move Media
Setup
Functions
History
LOGOUT
Set Name With Configuration Utility
Display a Library Trace Log
Library System Trace
Display Trace
Download a Binary File (.bin) from the Library to Your Hard Drive
The NextGen Library Trace file (48264 bytes)
The NextGen Library Non-Volatile Trace file (25348 bytes)
The NextGen Library Special Trace file (299144 bytes)
The NextGen Library Servo Trace file (23032 bytes)
Document: Done

Figure 8–11. Web TLC History Option

When you select a file, a *Save As* window appears, letting you select a network destination for the download. When you select display a trace log, the log will be seen through the browser.

Appendix A Specification

Hardware Specification

Table A–1 Hardware Specification

OPERATIONAL SPECIFICATION	Neo Series 2000	Neo Series 4000
Host SCSI Interface	LVD/SE	LVD/SE
Drive Configuration	0, 1, 2	0, 2, 4
Drive Compatibility	Quantum SDLT and DLT 8000 LTO Ultrium 200	Quantum SDLT and DLT 8000, LTO Ultrium 200
Number of Cartridges	26 removable (all SDLT/DLT, or 30 removable (all LTO)	52 removable (all SDLT/DLT, or 60 removable (all LTO)
Maximum Data Capacity (native)	>2.86TB, (all SDLT), or 3.00TB (all LTO), or 1.04TB (all DLT 8000)	>5.72TB, (all SDLT), or 6.00TB (all LTO), or 2.08TB (all DLT 8000)
Maximum Transfer Rate	>79.2GB/hr. (all SDLT), or 115.2GB/hr. (LTO), or 43.2GB/hr. (all DLT 8000)	>158GB/hr. (all SDLT), or 230.4GB/hr. (LTO), or 86.4GB/hr. (all DLT 8000)
Mount Time, into Drive	<10 seconds, approximate, Excluding XpressChannel access	<10 seconds, approximate, Excluding XpressChannel access
Dismount Time, from Drive	<10 seconds, approximate, Excluding XpressChannel access	<10 seconds, approximate, Excluding XpressChannel access
RELIABILITY	**Neo Series 2000**	**Neo Series 4000**
MTBF	>250,000 hours Excluding power supply, tape drives, and cooling fans	>250,000 hours Excluding power supply, tape drives, and cooling fans
MSBF	2,000,000 cartridge cycles	2,000,000 cartridge cycles
Design Life	7 yrs. @ 30% duty cycle	7 yrs. @ 30% duty cycle
MTTR	<10 min (most FRU's)	<10 min (most FRU's)
PHYSICAL CHARACTERISTICS (Tabletop Version)		
Height	8.75 in. (22.25) nominal (5U) Note: Rear rack enclosure door (if any) must provide minimum of 3.0" additional clearance, from rear of chassis, for SCSI cables and fan housings.	17.5 in. (44.50 cm) nominal (10U) Note: Rear rack enclosure door (if any) must provide minimum of 3.0" additional clearance, from rear of chassis, for SCSI cables and fan housings.
Width	16.75 in. (22.23 cm)	16.7 in. (42.4 cm)
Depth (including drive handles)	31.0 in. (78.74 cm)	31.0 in. (78.74 cm)

Table A–1 Hardware Specification (Continued)

Weight	Unpacked (approx.) 67.0 lbs. (30.40 kg) est. (with 2 drives installed) Packaged (approx.)99.0 lbs. (44.91 kg) estimated.	Unpacked (approx.) 127.0 lbs. (58 kg) estimated (with 4 drives installed) Packaged (approx.)199.0 lbs. (90 kg) estimated.

Environmental Specifications

Safety

Neo Series 2000 and 4000 Libraries comply with the following regulatory agency product safety specifications:

Table A–2 Safety Specification

AGENCY	STANDARD
UL Listed Mark	UL 1950, Standard for Safety of Information Technology Equipment
CUL Mark (Canadian UL)	CAN/CSA-C22.2 No. 950, Standard for Safety of Information Technology Equipment
CE Marking (European Union)	Low Voltage Directive, 72/23/EEC, European Union
TÜV GS Mark (Germany)	EN60950, (IEC950) Standard for Safety of Information Technology Equipment, Third addition

Electromagnetic Emissions

Neo Series 2000 and 4000 Library modules comply with the following EMC compliance specifications:

Table A–3 Electromagnetic Emissions Specification

AGENCY	STANDARD
FCC	US Std. 47 CFR, Part 15 Rules, Class A. Notation on Product
Industry Canada	Industry Canada Rules, ICES-003, Class A. Notation on product
CE Marking (European Union)	EMC Directive, 89/336/EEC Laws, relating to electromagnetic compatibility, European Union EN55022, Standard, RFI limits, Information Technology Equipment, Class A EN55024, Information Technology Equipment, Immunity.
VCCI	Class 1 per CISPR 22, Japan. VCCI statement on product
BSMI (BCIQ)	CNS: 13438, Taiwan. EMC warning and certificate number on product

Electrostatic Discharge

The test shall be run using an ESD test probe to directly contact operator-accessible surfaces, plus Neo Series 2000 and 4000 Library enclosure surfaces.

Table A–4 ElectroStatic Discharge Specification

AMPLITUDE	ALLOWABLE ERRORS
0 - 8 kV	NONE

Temperature, Humidity and Altitude

Table A–5 Temperature Humidity and Altitude Specification

NON-OPERATING - LONG TERM	Unpacked or Packed
Dry Bulb Temp	-40°Cto 60°C
Temp Gradient	20°C/hr. (across the range)
Temperature Shock	15°C (over 2 min.)
Wet Bulb Temp	30°C
Relative Humidity	5% to 95% (non-condensing)
Humidity Gradient	10%/hr
Altitude (sea level)	-1000 ft. to +10,000 ft.
TRANSIT - SHORT TERM	Packed 7 days
Dry Bulb Temp	-40°Cto 60°C
Temp Gradient	25°C/hr. (across the range)
Temperature Shock	15°C (over 2 min.)
Wet Bulb Temp	30°C
Relative Humidity	5% to 95% (non-condensing)
Altitude (sea level)	-1000 ft. to +10,000 ft.

Shock

Table A–6 Electromagnetic Emissions Specification

OPERATING	Within Spec - No Damage
Peak Acceleration	1.5 G's
Duration	11 ms
Waveshape	1/2 sine pulses
Application	X,Y,Z axes, repeat 3 times
NON-OPERATING	Unpacked - No damage)
Peak Acceleration	25 G's
Duration	11 ms

Table A–6 Electromagnetic Emissions Specification (Continued)

Waveshape	1/2 sine pulses
Application	X,Y,Z axes, repeat 3 times
TRANSIT/STORAGE	Packed - No damage
Peak Acceleration	30 G's
Duration	30 ms
Waveshape	1/2 sine pulses
Application	X,Y,Z axes, repeat 3 times
PHYSICAL DROP TEST	Packaged - No damage
Drop Test Distance	12 inches (30.5 cm)
Application	Per ISTA (1 time)

Vibration

Table A–7 Vibration Specification

OPERATING	Within Spec - No Damage
Frequency Range	5-1000-5hz
Peak Acceleration	.25 G's
Waveshape	Sinusoidal, 1 octave/min
Application	X,Y, Z axes, 2 sweeps pers
NON-OPERATING	Unpacked - No damage)
Frequency Range	5-1000-5hz
Peak Acceleration	1.0 G's
Waveshape	Sinusoidal, 1 octave/min
Application	X,Y, Z axes, 2 sweeps pers
TRANSIT/STORAGE	Packed - No damage
Frequency Range	5-1000-5hz
Peak Acceleration	2.0 G's
Waveshape	Sinusoidal, 1 octave/min
Application	X,Y, Z axes, 2 sweeps pers

Primary Power

Voltage Limits

The Neo Series 2000 and 4000 Libraries are capable of using any nominal AC voltage between 100 and 240VAC power, at 50 or 60 Hz. The machines are capable of powering up and operating without error from any voltage within the ranges specified:

Frequency Limits

Neo Series 2000 and 4000 Libraries are capable of operation at either 50Hz or 60Hz. The machines will automatically adjust for 50-60Hz primary power operation, without requiring user intervention or modification.

Power Requirements

Neo Series 2000 Library, with two tape drives installed, exhibits a nominal steady state AC power consumption of 192watts, and a maximum peak power consumption of 240 watts.

Neo Series 4000 Library, with four tape drives installed, exhibits a nominal steady state AC power consumption of 344 watts, and a maximum peak power consumption of 430 watts.

Table A–8 Current

	Current
Neo Series 2000	1.6 - 1.0A (120VAC - 240VAC)
Neo Series 4000	3.5 - 1.8A (120VAC - 240VAC)

Sag / Surge Protection

Once powered on, the Neo Series 2000 and 4000 Libraries continue to operate, without error, under the following conditions of line surge and sag:

Table A–9 Sag / Surge Protection

CONDITION	PERIOD
100v -20%	2 seconds
120V +15%	1 second
200V -20%	2 seconds
240V -20%	2 seconds

Power Line Disturbance

Once powered on, the Neo Series 2000 and 4000 Libraries continue to operate, without error, under the following conditions of power line disturbances:

Table A–10 Power Line Disturbance

DISTURBANCE	PERIOD	LIMIT
PULSE		
1.2ms rise - 50ms decay	High	1.0 KV, Max.
8.0ms rise - 20s decay	Low	300A, Max
RING - 0.5ms @ 100 KHz	High	1.0KV, Max
	Low	200A, Max

Cooling

Forced-air cooling is used to keep the tapes drives, logic devices, motor amplifiers, motors, and power supply(s) below their maximum allowable temperatures at ambient extremes.

FCC Notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Japanese Voluntary Control Council for Interference (VCCI)

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＡ情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

Translation

This is a Class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may occur, in which case, the user may be required to take corrective actions.

DECLARATION OF CONFORMITY

We, Overland Storage (Europe) Ltd.
Overland House, Ashville Way
Wokingham, Berkshire
RG41 2PL England, United Kingdom
on our own responsibility, declare that the product:

Kind of equipment:	Magnetic Tape Library
Type designation:	NEO Series 2000, Model x-LXN2x (where x = system configuration prefixes or suffixes)

is in compliance with the following norms and documents:

European Council Directive 89/336/EEC laws relating to electromagnetic compatibility. (EMC Directive)
- EN 55022, Radio Frequency Interference limits and measurement, Information Technology Equipment, class A.
- EN61000-3-2/A14, Harmonic Emissions.
- EN61000-3-3, Fluctuations and Flicker.
- EN 55024, Information Technology Equipment - Immunity.

European Council Low Voltage Directive 73/23/EEC
- EN 60950, Information Technology Equipment - Safety.

Accredited test laboratory:	TUV Product Service 10040 Mesa Rim Drive San Diego, CA, 92121, USA

Christopher Calisi
President and CEO
Manufacturer/Authorized representative, name and signature

1 July 2001
Overland Storage Inc.
4820 Overland Ave.
San Diego, CA, 92123, USA
Place and date of issue

DOC-LXN2-R1.doc 04/01/2003

DECLARATION OF CONFORMITY

We, Overland Storage (Europe) Ltd.,
Overland House, Ashville Way
Wokingham, Berkshire
RG41 2PL England, United Kingdom
on our own responsibility, declare that the product:

Kind of equipment:	Magnetic Tape Library
Type designation:	NEO Series 4000, Model x-LXN4x (where x = system configuration prefixes or suffixes)

is in compliance with the following norms and documents:

European Council Directive 89/336/EEC laws relating to electromagnetic compatibility. (EMC Directive)
- EN 55022, Radio Frequency Interference limits and measurement, Information Technology Equipment, class A.
- EN61000-3-2/A14, Harmonic Emissions.
- EN61000-3-3, Fluctuations and Flicker.
- EN 55024, Information Technology Equipment - Immunity.

European Council Low Voltage Directive 73/23/EEC
- EN 60950, Information Technology Equipment - Safety.

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Christopher Calisi
President and CEO
Manufacturer/Authorized representative, name and signature

1 July 2002
Overland Storage Inc.
4820 Overland Ave.
San Diego, CA, 92123, USA
Place and date of issue

DOC x-LXN4x R2.doc 04/03/2002

Installation Considerations

Rack Mounting

If rack mounted units are installed in a closed or multi-unit rack assembly, they may require further evaluation by Certification Agencies. The following items must be considered:

1) The ambient within the rack may be greater than room ambient. Installation should be such that the amount of air flow required for safe operation is not compromised. The maximum temperature for equipment environment is 50°C. Consideration should be given to maximum rated ambient.
2) Installation should be such that a hazardous stability condition is not achieved due to uneven loading.

Input Supply

Check nameplate ratings to assure there is no overloading of supply circuits that could have an effect on overcurrent protection and supply wiring.

Grounding

Reliable earthing of this equipment must be maintained. Particular attention should be given to supply connections when connecting power strips, rather than direct connections to the branch circuit.

Appendix B Adding a Tape Drive

Introduction

This section explains how to add a tape drive to the library. See Chapter 1, "Introduction," for a list of tape drives supported by the library.

Adding a Tape Drive

To add a tape drive:

1) Unpack the tape drive and visually inspect it for any damage. If you feel that the tape drive has been damaged, return it to Overland Storage for a replacement.

CAUTION

With a blank panel or tape drive removed, there is access to moving parts. DO NOT reach into open cavities

VORSICHT

Wenn eine Gehäuseplatte oder ein Band-Laufwerk entfernt wurde, gibt dies Zugang zu sich bewegenden Teilen. Greifen Sie NICHT in den Hohlraum.

NOTE: Overland Storage tape drives are hot-plug capable so you do not have to turn the library off while removing or installing a tape drive.

2) If installed, remove the blank panel that covers the appropriate tape drive mounting bay (see Figure B–1). Save the blank panel for future use.

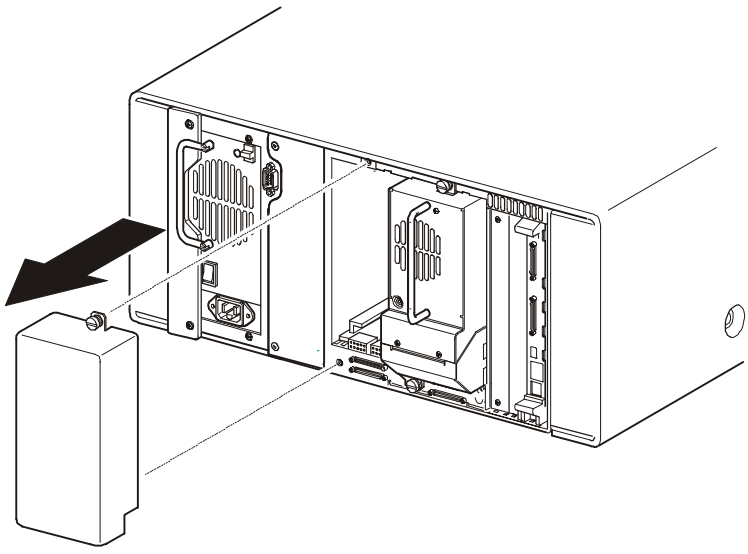


Figure B–1. Removing Tape Drive Blank Panel

3) Carefully insert the tape drive into the mounting bay. Make sure you push the tape drive all the way in so it fully seats in the mating connectors at the rear of the library (see Figure B–2).

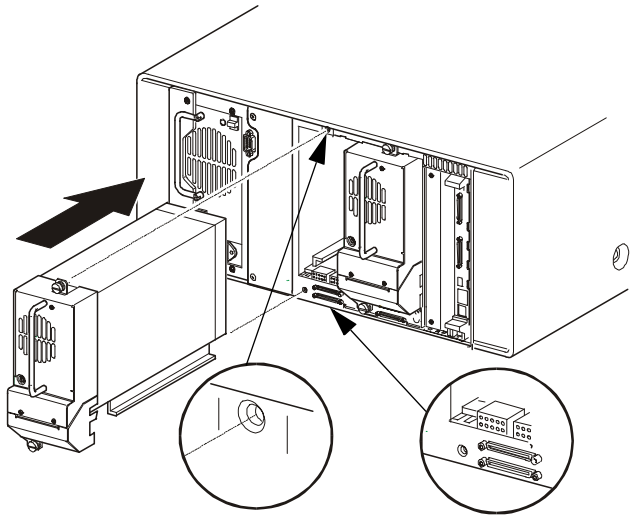


Figure B–2. Installing a Tape Drive

4) Secure the tape drive to the library using the two thumbscrews.

5) Activate the tape drive.

Appendix C Elevator Assembly Installation

Introduction

Neo Series SmartScale Storage™ architecture is uniquely suited to growing storage needs. The SmartScale Storage™ architecture enables the robotics in each of the Neo Series Library modules to exchange cartridges by means of an Elevator Assembly, and integrates the robotics in the individual modules into a single high-performance library robotics system. You can start with a system configured to your present requirements, confident that as your storage needs evolve, the Neo Series Library can easily be modified by adding modules and extensions to the Elevator. Add drives for faster performance or magazine space for greater capacity, as needed.

Described below are the major steps needed to install a Elevator Assembly.

Rack Preparation:

- Verify correct installation and alignment (crucial for ease of installation for the Elevator to rack-mounted modules as per the Neo Series User and Installation Manual (104248-xxx) and Rack Installation Templates. Note that re-alignment of the modules may be required during installation of the Elevator Assembly.

Verify Minimum Firmware:

- Check the firmware level of the module you select as the Master control module (the top Neo module in the rack is the Master control module).

Mechanical Installation:

- Installing the Router.
- Installing the modules in the rack.
- Assembling the Elevator (the 10U and 20U base units are factory assembled). Combinations of the base units and the three available extensions (5U, 10U, and 20U) may be added to accommodate virtually any configuration of Neo Series modules up to a total of 40U.
- Installing the Elevator in the rack mounted modules.

Configuration:

- Graphical User Interface (GUI) inputs to configure Master and Slave modules.

Cabling:

- Motor Cable from the Master module to the Elevator Assembly primary.
- 10BaseT cables from the router to Master and Slave Modules.

Secondary Master

- Configuration

- Fail-over Initiation
- Primary Master restoration

Planning Your Installation

The Neo Series Elevator Assembly is intended to be mounted in a standard 19-inch RETMA equipment rack with a depth of 24 to 30 inches. Elevator kits may include variations of the following:

- Factory assembled Two High (10U) or Four High (20U) Primary Elevator Base.
- Elevator Extension kit(s) (5U, 10U, or 20U lengths).

The Elevator Assembly is composed of either a 10U or 20U motor drive assembly plus extensions whose combined length is equal to the combined heights of the number of modules installed in the rack or as specified by the customer. An additional extension section and timing belt is needed for installation with each additional module.

Prepare each module in the multi-unit library system for Elevator installation by removing the cover blanks, drive shoe assemblies (Drives 2 and 4 for 4000 series models), and/or blank drive shoe covers while they are outside of the storage cabinet. Alignment of the Neo modules may be necessary during the installation.

Positioning Your Modules and the Elevator

The Elevator Assembly motor drive section must be mounted at the top of the library stack. The top Neo module is designated as the Master via the Graphical User Interface (GUI) and senses the position of each module during initialization at power-up. The other Neo modules are designated as the slaves.

For ease of installation and running the 10BaseT cables from the Router to the individual modules, it is recommended that the router be mounted at the top rear of the RETMA rack (above the Master module). In addition, mounting the router at the top of the RETMA rack allows for easy growth for future expansion of your storage capability.

NOTE: It is recommended that all Neo Series libraries in a multi-unit library system use the same drive types. Check with your application software vendor if you want to mix drive types in the multi-unit library system to manage partitioning by tape technology.

Verify Minimum Firmware Level

The first models of the Neo Series that were produced did not incorporate the functionality required for the SmartScale Storage™ architecture operation. The minimum firmware level needed to operate a multi-module configuration without fail-over is Firmware Revision 2.28. (With fail-over included Firmware Revision 2.33 is required). For example, if the module you select as the Master is at firmware level 2.28 or higher, then you can proceed with the mechanical installation of the Elevator Assembly. If the firmware level is below 2.28, then the selected Master module should be upgraded before putting the multi-module system into service. To verify the firmware level of the Master module:

1) Apply power to the module, see Figure C–1.
2) Connect the power cord to the power supply's receptacle (❶).
   a. Toggle the power switch located on the power supply to ON (❷).
   b. Press anywhere on the GUI touch screen to apply power to the module (❸).

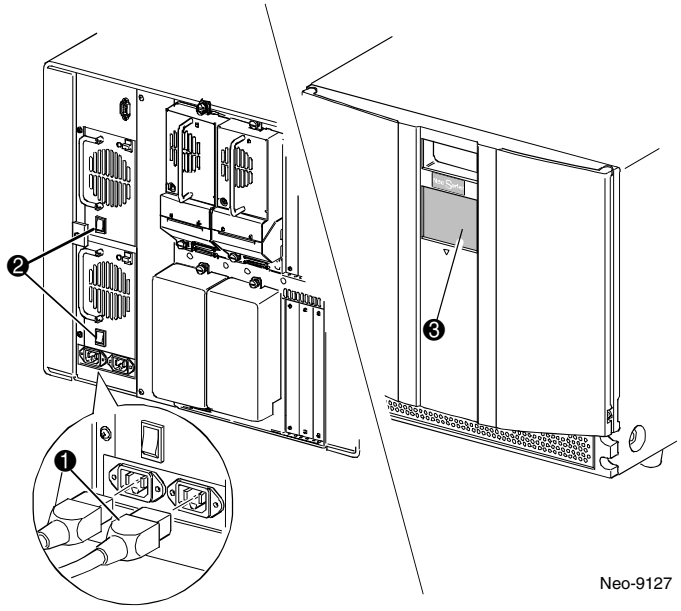


Figure C–1. Powering up the Library

3) After the **POST** completes, press **Menu**.
4) Press **Library Inf**o in the View System Data area.
5) The firmware revision appears on the technical support window.

The firmware in the Master module should be upgraded before continuing with the installation of the Elevator.

The latest release of the firmware can be obtained from the Overland Storage ftp site. Point your browser to-

1) Ftp://ftp_user:soundoff@ftp.overlanddata.com/outgoing/nextgen
2) Download the firmware file neolib_nnn.bin

NOTE: Refer to the Neo Series Installation and User Manual for instructions on using the NeoCenter Utility or the WebTLC to upgrade the firmware. For additional assistance, contact Overland Storage Technical Support.

Neo Series Router

The Neo Series™ Router is an 7or 8 Port, Overland Storage Inc. configured device. It is designed as plug and play when installed in a standard RETMA rack and connected via 10BaseT cables to individual Neo modules. The router is capable of supporting up to seven Neo Series Libraries. It is pre-configured at the Overland factory specifically for use with a Neo Series multi-module library. The router is physically encased in a rack mountable shelf to be installed in the rack.

Router Installation

1) Verify that power is not applied to the router and the power cord is not connected.

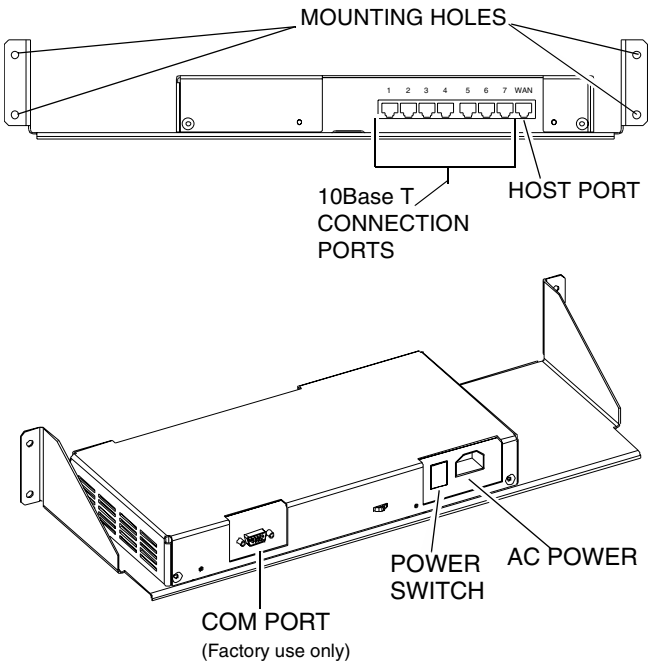


Figure C–2. Typical Router (7 Port)

2) Position and hold the router in place at the top rear of the RETMA rack to locate the mounting holes in the rack rails.

3) Install the four captive fasteners into the RETMA rack rails, see Figure C–2 and Figure C–3.

4) Mount the Router using the four screws (10-32x 1/2 P.H.).

NOTE: Once the Router is installed in the rack do not apply power or connect any cables.

5) In most cases you have received a pre-assembled 10U or 20U Elevator Assembly. If the length is correct for your system. Proceed to the section "Installing the Elevator Assembly". If you need to add a Elevator extension to your system, proceed to the section "Elevator Assembly Extension".

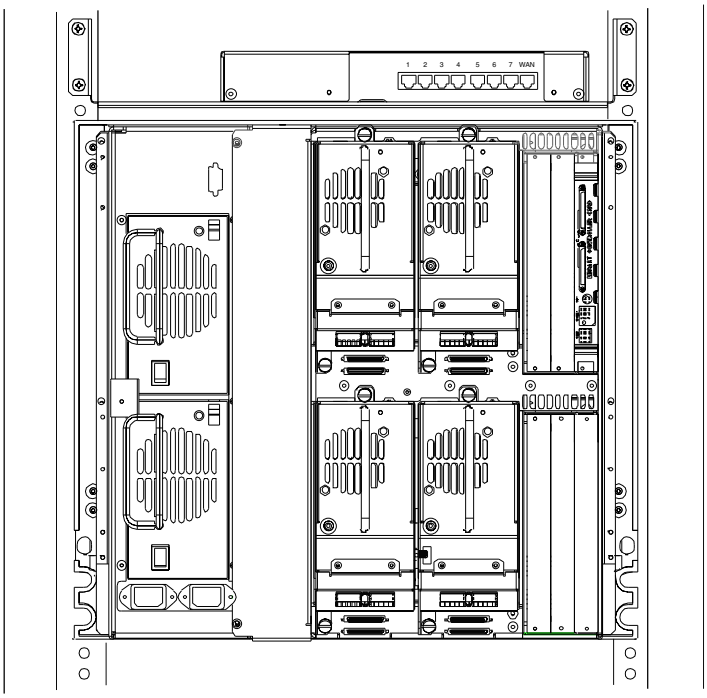


Figure C–3. Router Installed

Installing the Elevator Assembly

"Installing the Elevator Assembly" addresses the installation of a completely assembled Elevator Assembly, built with your system requirements in mind (10U to 40U). The below procedure assumes that the Outer Skin cover and rubber feet have been removed (tabletop units) and the modules have been prepared for rack mount installation or are installed in a RETMA rack.

NOTE: Before rack mounting your Neo modules for a Elevator application, ensure that the router is mounted at the top area of the RETMA rack.

1) If modules are rack mounted, verify that all units are powered down and the power cords are removed.

CAUTION:
Attempting to install the Elevator to a fully powered Neo Series module may cause severe damage to unit circuitry.

2) Remove Drive Shoe 2 and Drive Shoe 4, see Figure C–4, or the blank cover for each module that will use the Elevator.

CAUTION
With a blank panel or tape drive removed, there is access to moving parts. DO NOT reach into open cavities

VORSICHT
Wenn eine Gehäuseplatte oder ein Band-Laufwerk entfernt wurde, gibt dies Zugang zu sich bewegenden Teilen. Greifen Sie NICHT in den Hohlraum.

a. Loosen the captive retainer screws at the top center and lower left of the drive module.

b. Pull straight back on the drive shoe handle to remove the drive. Some effort will be required to overcome the initial resistance of unplugging the module from the receiver.

c. Continue to slide the drive out while fully supporting the module until the drive load handle has cleared the back of the library.

3) Remove the Elevator blank cover plate adjacent to the power supply.

a. Remove two screws from the back of the cover plate, see Figure C–5.

b. Remove two inner screws from inside the drive shoe slot, see Figure C–5.

c. Remove top screw, Figure C–5. Rack mounted modules must be slid forward to access the top cover screw.

NOTE: For illustration purposes, a drive and a blank cover are shown.

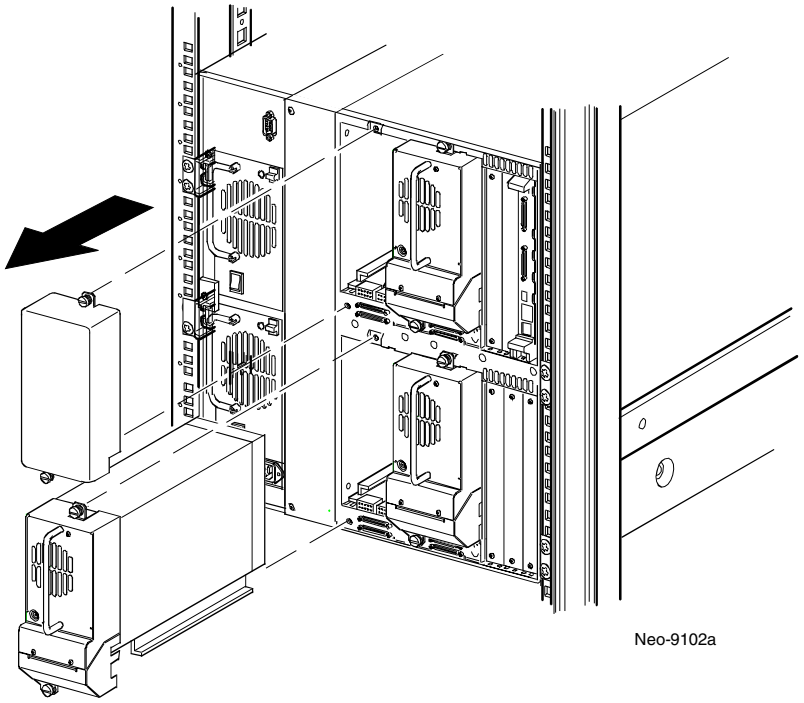


Figure C–4. Drive Shoe/Blank Panel Removal

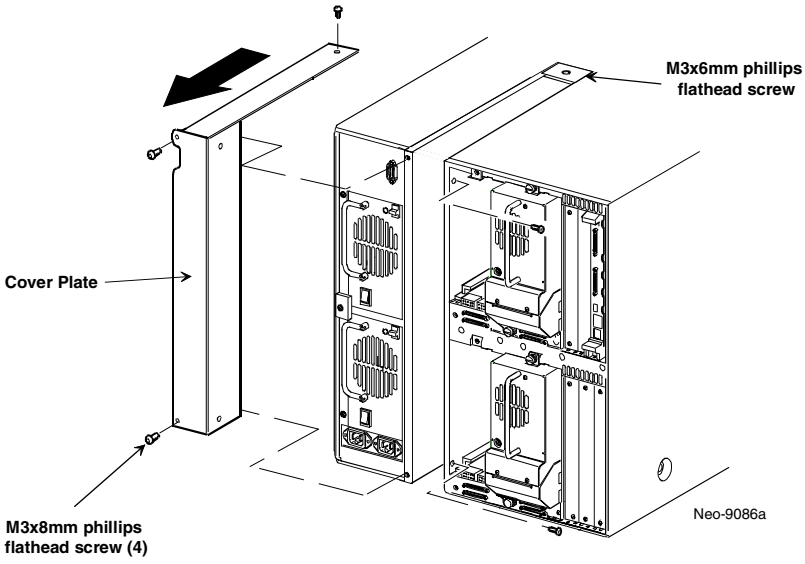


Figure C–5. Cover Plate Removal

4) Install all of the modules in the equipment rack. If necessary, use instructions in the Neo Series Installation and User Manual.

5) Slide each of the Neo Series modules a few inches forward, starting below the top (master) library module.

NOTE: When installing the Elevator Assembly it is recommended that you work from top to bottom of the library assembly. This method adds to ease of alignment with less binding of the inner guide pins. As each module is physically connected via the retaining screws, slide the module back until seated and the inside guide pin and retainer holes are aligned. Then tighten the retainer screws.

6) Carefully insert the Elevator base unit into the top library module making sure the top pins are fully engaged.

7) Using the Elevator base unit top and top-middle thumbscrews, secure the base unit to the top library.

8) Using the Elevator base unit bottom-middle and bottom thumbscrews, secure the base unit to the second library.

NOTE: If the pins are difficult to align to the bottom (slave) libraries, push them forward slightly and then engage each one by pulling them (one at a time) toward the Elevator Assembly and then tighten the appropriate thumbscrews.

9) Using the Elevator extension thumbscrews, secure it to the remaining libraries in the multi-unit library system.

NOTE: If you still cannot align the bottom (slave) libraries to the Elevator base unit, slightly loosen the rear rail bracket screws for each library, reposition it, and then secure it to the Elevator assembly. Afterwards, re-tighten all rear rail bracket screws.

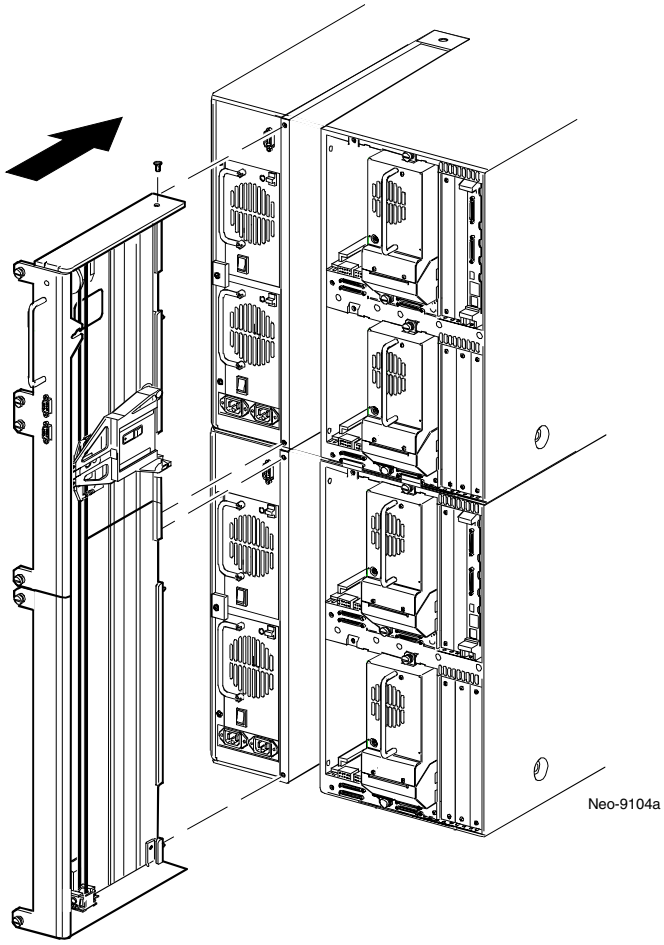


Figure C–6. Installing the Elevator Assembly

10)Replace Drive 2 or the blank cover to all modules. If replacing a drive, repeat the procedure below for each module, see Figure C–4 or Figure C–7.

a.Fully support the Drive Shoe Assembly while starting it into the receiver being careful not to damage the drive load handle.

b.Push the Drive Shoe Assembly slowly into the receiver until it seats against the back of the library.

c.Tighten the two captive retainer screws to secure the module to the library.

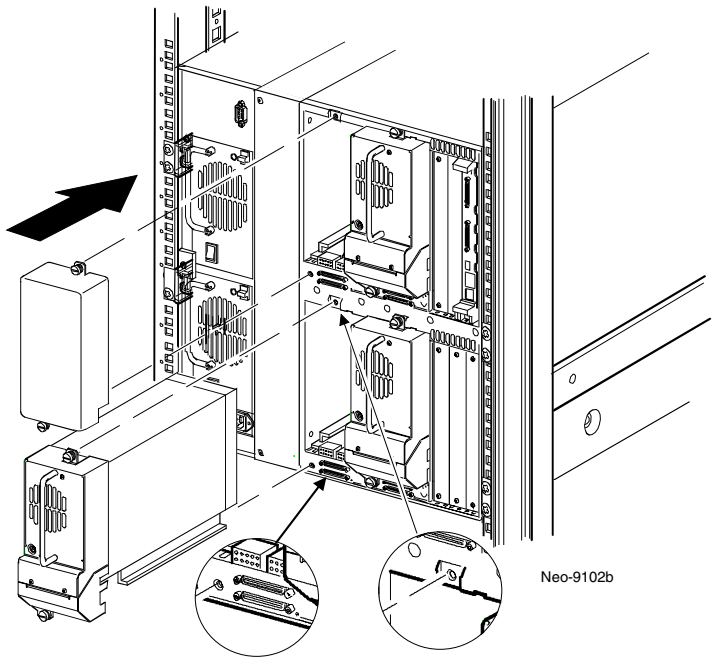


Figure C–7. Installing a Tape Drive

d.Repeat for all modules

11)See Section "NeoSeries Module Configuration".

Elevator Assembly Extension

Mechanical Installation

Assembly of the Elevator Assembly requires experience working with moderately complex mechanisms, and the ability to follow directions carefully.

The Elevator Assembly is made up of the following components as shown in Figure C–8.

- Elevator Primary Chassis (10U or 20U lengths)
- Elevator Media Car
- Elevator PCB
- Belt Block and Brackets
- Drive Belt
- Drive Motor
- Drive Motor Pulley
- Belt Tensioning Ramp and Idler Pulley
- Standoff
- Motor Cable

Elevator Extension Components

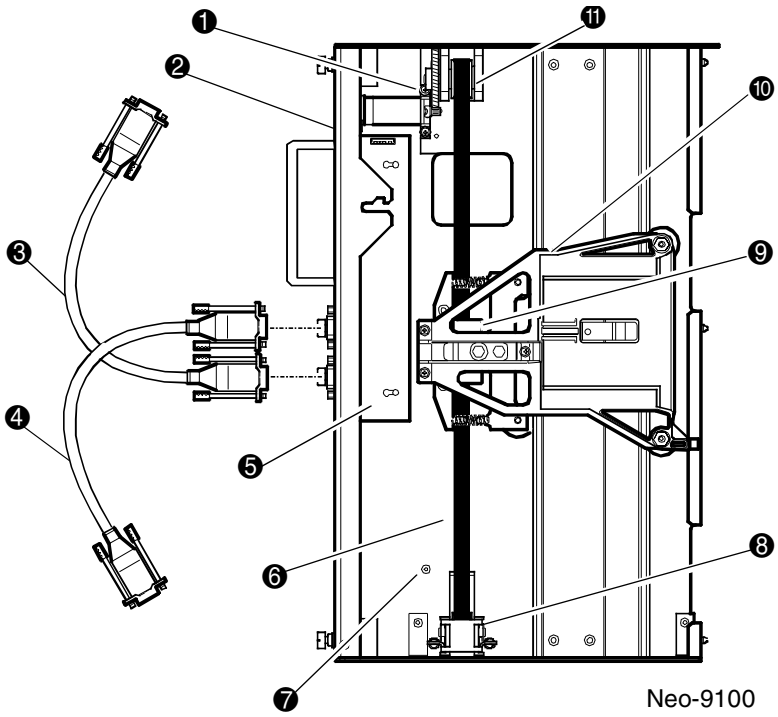
- 5U, 10U, or 20U Extensions
- Tie Bars (to connect extensions)
- Install Hardware

Elevator Assembly Required Tools

- #2 Phillips, Stubby, or right-angle screwdriver
- Flat-blade screwdriver
- 0.050-inch Allen wrench (recommended)
- Scissors or knife (for sizing the belt)

Orientation Of Parts During Assembly

Figure C–8 shows a typical Overland assembled 10U Elevator Assembly. The motor drive section always goes on top, and the base section with the idler pulley always goes on the bottom. Extension sections are mounted between the motor drive section and the base section. All extensions are joined together with tie bars. The Elevator moves tape cartridges vertically between the modules.



❶ Drive Motor

❷ Elevator Primary Chassis

❸ Motor Cable (Master)

❹ Secondary Master Cable

❺ Elevator PCB

❻ Drive Belt

❼ Standoff

❽ Belt Tensioner Ramp and Idler Pulley

❾ Belt

Figure C–8. Factory Assembled Elevator Assembly

Preparing to Assemble the Elevator

You will need a clean, flat work area such as a table or work bench. The surface should be long enough to support the full height of the Elevator Assembly. The height is equal to the height of the stack of modules in your system. Use the following procedure to assemble your Elevator.

If you have received a pre-assembled 10U or 20U Elevator Assembly and the length is correct for your system, refer to the section titled "Installing the Elevator Assembly". If you need to add an Elevator extension section, see the below procedures.

1) Remove the retaining screws from the bottom plate of the base Elevator.

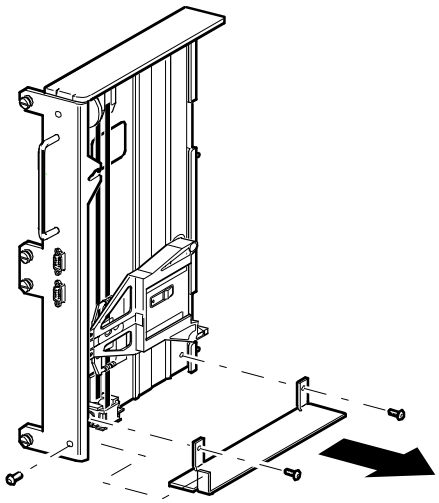


Figure C–9. Elevator Bottom Plate

2) Slide the Media Elevator Car to the top of the primary chassis. See Figure C–10.

NOTE: Elevator car is now positioned over the belt block bracket access cutout next to the PCB and drive motor

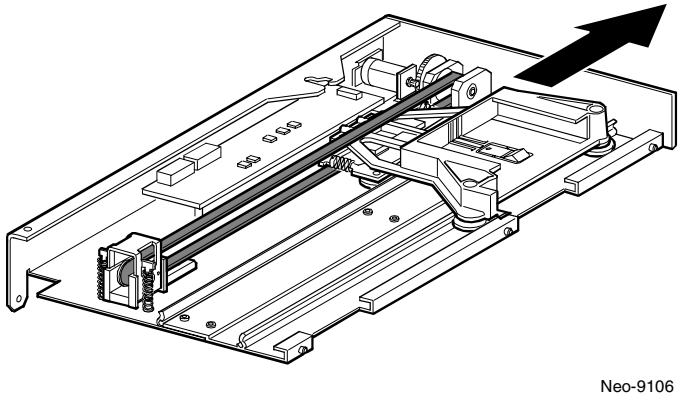


Figure C–10. Media Elevator Car

3) On the Tensioning Ramp/Idler Pulley base on the primary chassis: Compress the springs until the holes in the Tensioning Ramp are aligned with the holes in the base of the Tensioner, and insert a 0.050 inch allen wrench through the holes. This sets the Idler Pulley to the zero position. See Figure C–11.

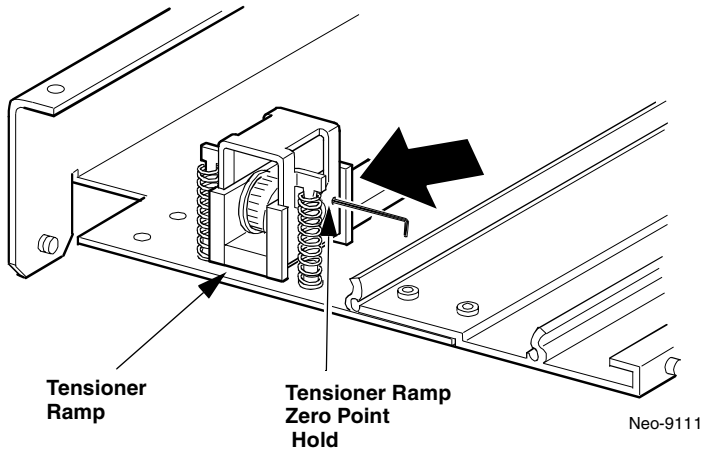


Figure C–11. Tensioner Ramp/Idler Pulley Zero Point

4) Turn the Elevator primary chassis face down.

NOTE: The belt block brackets and fasteners are now visible through the access cutout.

5) Remove the four mounting screws from the two Belt Block Brackets, see Figure C–12.

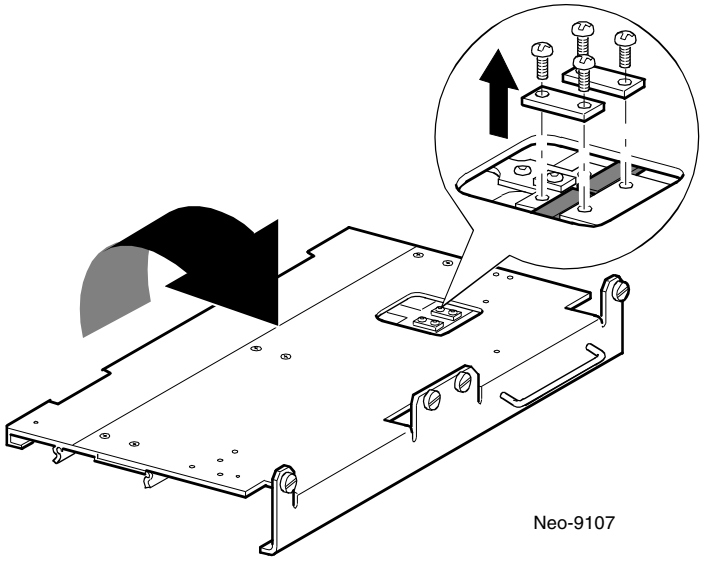


Figure C–12. Elevator Belt Block and Brackets

6) Turn the primary chassis face up and remove the belt from the Media Elevator Car and the Tensioner Ramp/Idler Pulley.

7) Remove Belt Tensioning Components, see Figure C–13.

8) Remove the 2 screws and springs from Tensioner Ramp/Idler Pulley.

9) Remove Tensioner Ramp/Idler Pulley.

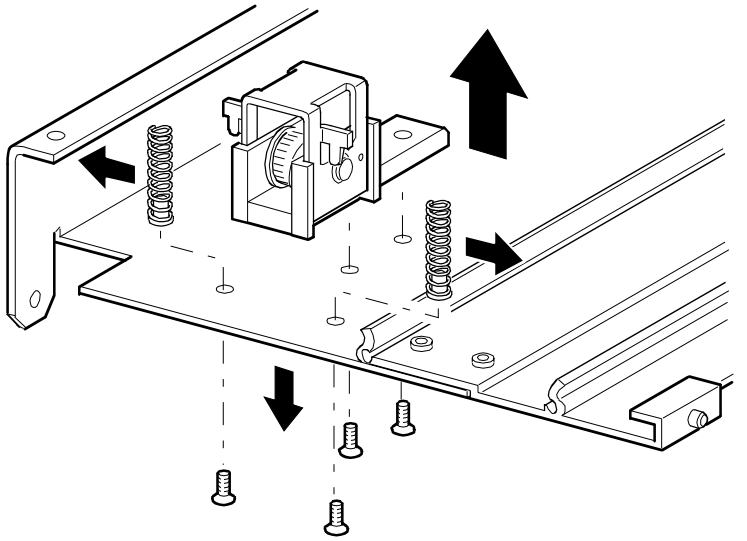


Figure C–13. Tensioner Ramp/Idler Pulley

10)Mounting the Elevator extension:

a.Insert alignment pins of the extension to the slot at the bottom of the Elevator Primary chassis. See Figure C–14.

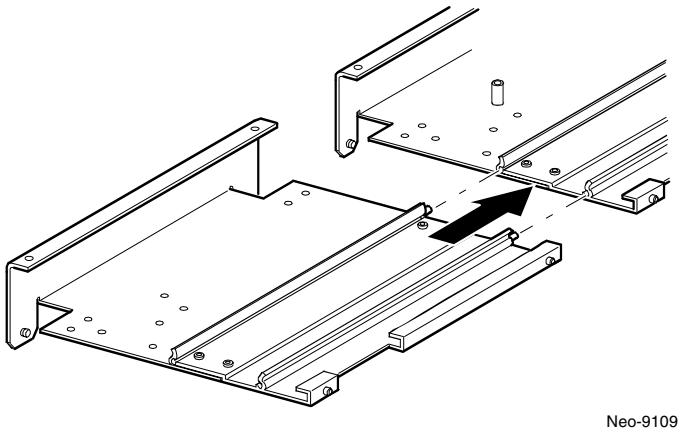
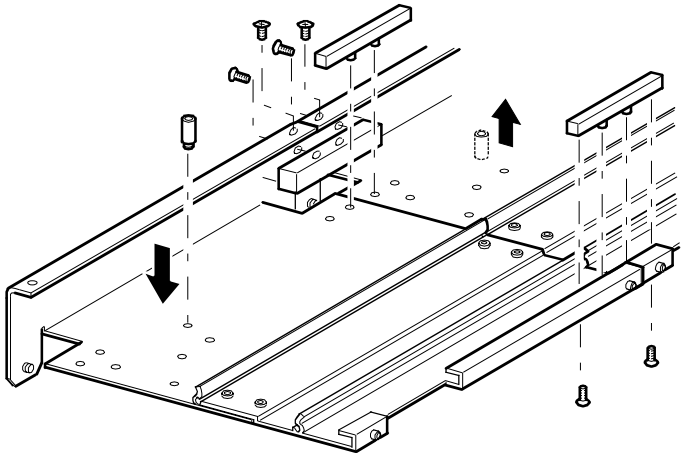


Figure C–14. Elevator Extension Alignment

b.Align the tie bar pins of the 2 narrow tie bars to the holes in the extension and primary chassis and attach with the four mounting screws (2 each). See Figure C–15.



Neo-9110

Figure C–15. Tie Bar Installation

c. Attach the large tie bars (beveled edge to the inside corner of the chassis and extension) with the four mounting screws.

11) Remove the Bottom Stop Standoff from the primary chassis and attach to the Elevator extension in the corresponding mounting hole. See Figure C–15.

12) Attach tensioner springs mounting hardware and springs.

13) Attach Tensioner Ramp/Idler Pulley Components to the Elevator extension in the same manner as depicted in Figure C–13.

14) On the Tensioner Ramp/Idler Pulley base on the base expansion section: Compress the springs until the holes in the Tensioner Ramp are aligned with the holes in the base of the Tensioner, and insert a 0.050 inch allen wrench through the holes. This sets the Idler Pulley to the zero position. See Figure C–11.

15) Cut the new timing belt supplied with the expansion kit (between the teeth) to the appropriate size for the total number of Neo modules used. See Table C-1.

NOTE: The Timing Belt supplied with the expansion kits is marked and numbered at the appropriate cut points.

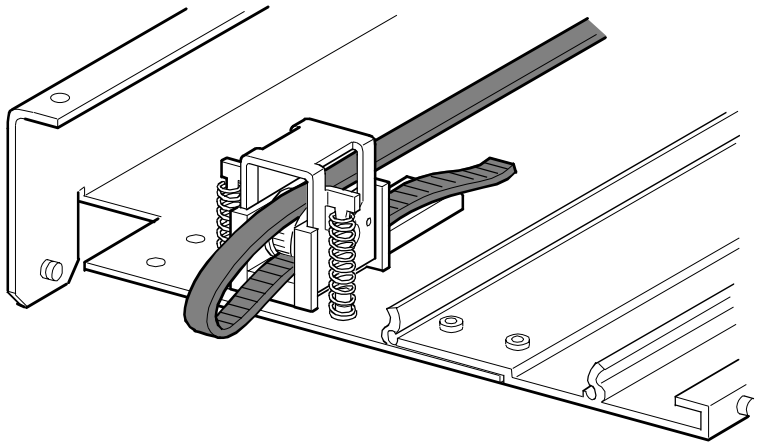
Table C-1 Timing Belt Lengths

Number of Modules	Number of Teeth	Length of Belt Centimeters	Length of Belt Inches
2	169	85.8	33 13/16
3	257	130.6	51 3/8
4	344	174.8	68 13/16
5	432	219.5	86 3/8

Table C-1 Timing Belt Lengths

Number of Modules	Number of Teeth	Length of Belt Centimeters	Length of Belt Inches
6	519	263.6	103 13/16
7	607	308.4	121 3/8
8	694	352.6	138 13/16

16)Thread the Timing Belt counter-clockwise through the top of the Tensioner Ramp/Idler Pulley and clockwise through the motor drive pulley. See Figure C–16 and Figure C–17.



Neo-9112

Figure C–16. Timing Belt Installation Base Section

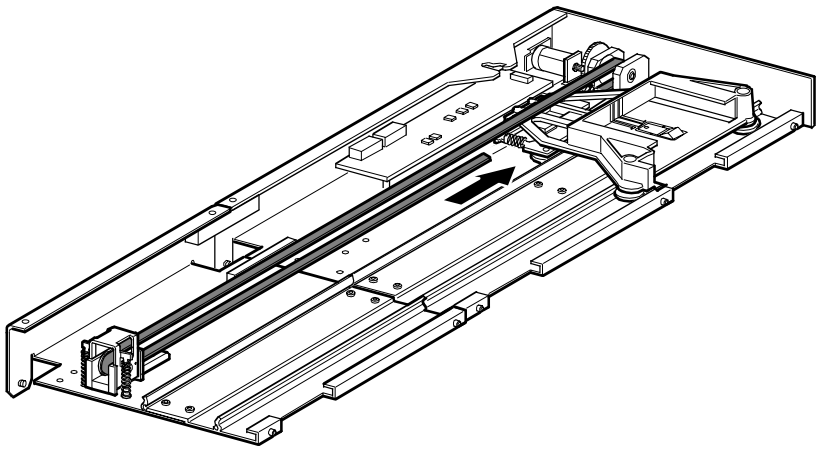


Figure C–17. Timing Belt Installation

17)Position Media Elevator Car over the Belt Block Access cutout.

18)Position the ends of the Timing Belt under the media car at the midpoint of the Belt Block Access Cutout.

19)Turn the Elevator face down.

20)Place the Timing Belt ends on the Belt Block. See Figure C–18.

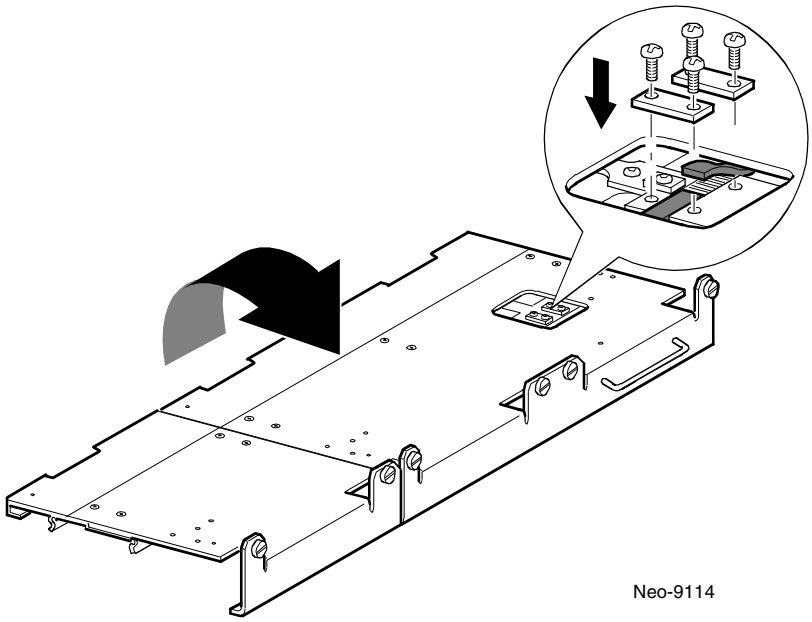
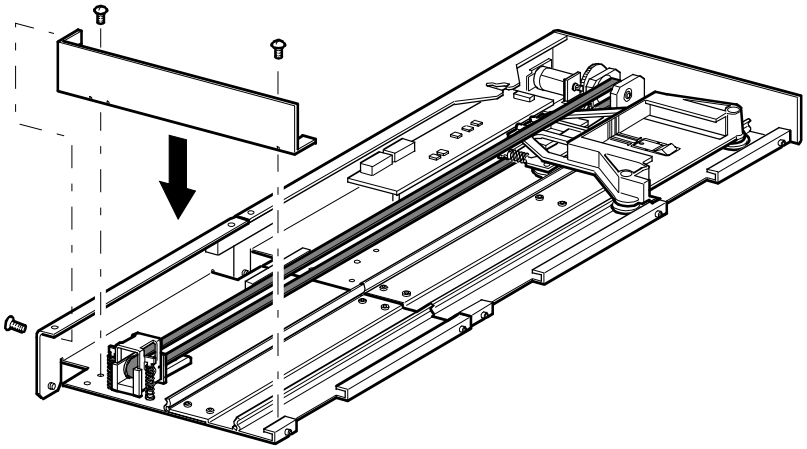


Figure C–18. Timing Belt to Belt Block

21)Secure the Timing Belt with the two belt brackets and four retaining screws. If the belt was sized properly a small space between the belt ends is visible, see Figure C–18.

22)Remove the 0.050 inch allen wrench from the Tensioner Ramp.

23)Attach the bottom plate removed from the Elevator in step (1) with the retaining screws, see Figure C–19.



Neo-9115

Figure C–19. Assembled Elevator and Extension

24)See Section "Installing the Elevator Assembly".

Neo Series Module Configuration

Configuring the multi-module Neo library identifies which Library module is the Master and which are the Slaves. The module designated as the Primary Master has the ability to monitor, view and modify parameters and settings of the entire multi-module Library. It is readily apparent by comparing the Primary Master and Slave Graphical User Interfaces (GUI). The Primary Master can be used to perform many of the common functions within each slave module. The following procedure prepares your multi-module library for Elevator use.

NOTE: The following procedure assumes that the modules are configured for standalone operation, have been rack mounted, the system router is installed at the top of the rack above the Primary Master with power off and the 10BaseT cabling is not connected to any of the modules.

Configuring Modules For Elevator Application

If the modules are not powered up, apply power to all library modules as follows, see Figure C–20:

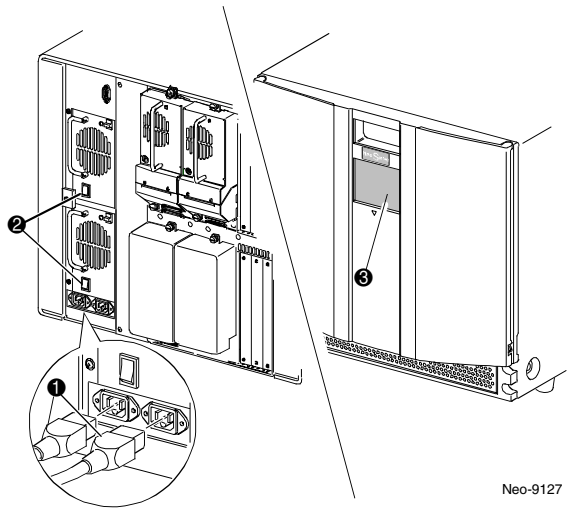


Figure C–20. Powering up the Library

1. Connect the power cord to the power supply's receptacle (❶).
   a. Toggle the power switch located on the power supply to ON (❷).
   b. Press anywhere on the GUI touch screen to apply power to the module (❸).

Configuring the Primary Master Module

1) On the GUI at the Neo module located at the top of the rack (to be identified as the Primary Master) Press **Menu**.

Figure C–21. Neo Main GUI Display

2) Under **Edit Options** Press **Library**.

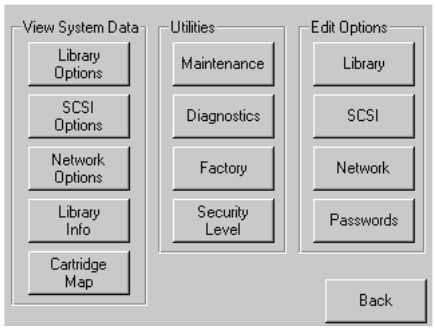


Figure C–22. Menu Screen

3) Press the scroll down arrow until Module Configuration is visible.

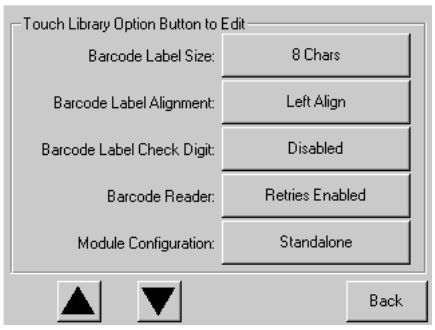


Figure C–23. Module Configuration Select Screen

4) Press the button adjacent to Module Configuration.

The module configuration menu appears:

5) Press **Master**, then press **Save**.

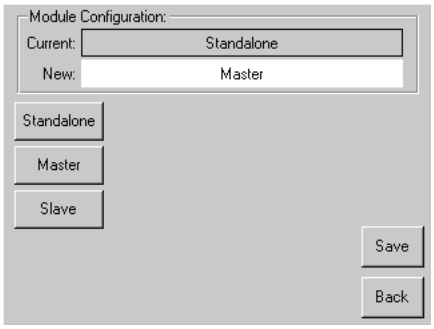


Figure C–24. Module Configuration Screen

Module Configuration confirm pop-up window appears:

Figure C–25. Module Configuration Confirm

6) Press **OK**. Module reboots.

NOTE: The GUI main screen will display the module as the "Primary Master (Active)" when all cabling has been performed correctly.

Figure C–26. Primary Master Screen

Configuring Slave Modules

1) On the GUI at the Neo module located below the Primary Master (to be identified as the Slave) Press **Menu**.

Figure C–27. Neo Main GUI Display

2) Under **Edit Options** Press **Library**.

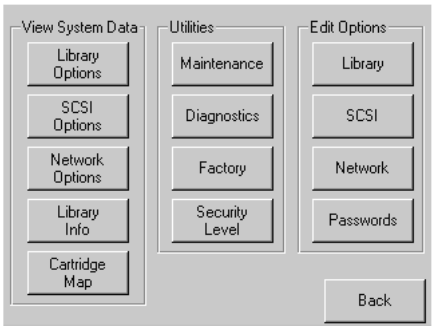


Figure C–28. Menu Screen

3) Press the scroll down arrow until Module Configuration is visible.

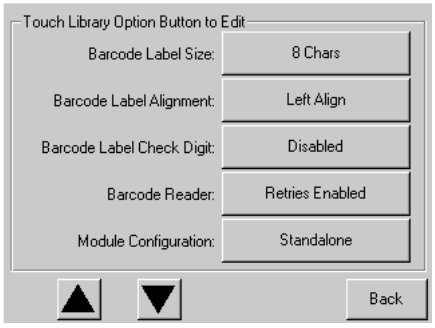


Figure C–29. Module Configuration Select Screen

4) Press the button adjacent to Module Configuration.

The module configuration menu appears:

5) Press **Slave**, then press **Save**.

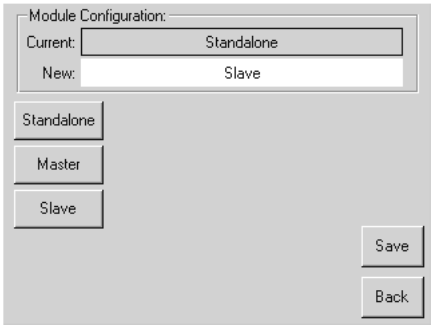


Figure C–30. Module Configuration Screen

Module Configuration confirm pop-up window appears:

Figure C–31. Module Configuration Confirm

6) Press **OK**. Module reboots.

NOTE: Several screen functions are no longer available. Functions including Online, Magazine Access, Mail Slot Access and Move Media are now controlled via the Master. With the Elevator cable installed the top most slave is designated as "Secondary Master (Standby)". The missing options identify the module as a Slave, see Figure C–32.

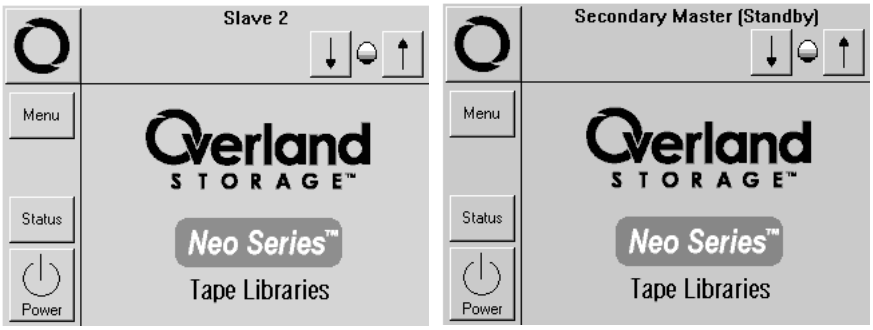


Figure C–32. Typical Configured Slaves

7) Repeat Steps (1) through (6) for all slave modules.

8) Using the GUI, power off all modules, Master and Slaves after configuration, and then switch the Master Power Switch at the rear of each module to the off (0) position.

9) Verify all modules are powered down.

10) Proceed to "Cabling and Interface Connections".

Cabling and Interface Connections

Before the Neo Series with the Elevator Assembly can communicate with the host device or user applications, the following cable connections must be made, see Figure C–33. A four module Library is used for illustration purposes. The second module (Slave 0) has been selected as the Secondary Master

1) Verify that the modules and router have been properly installed in the rack. Power down all the modules and the router.

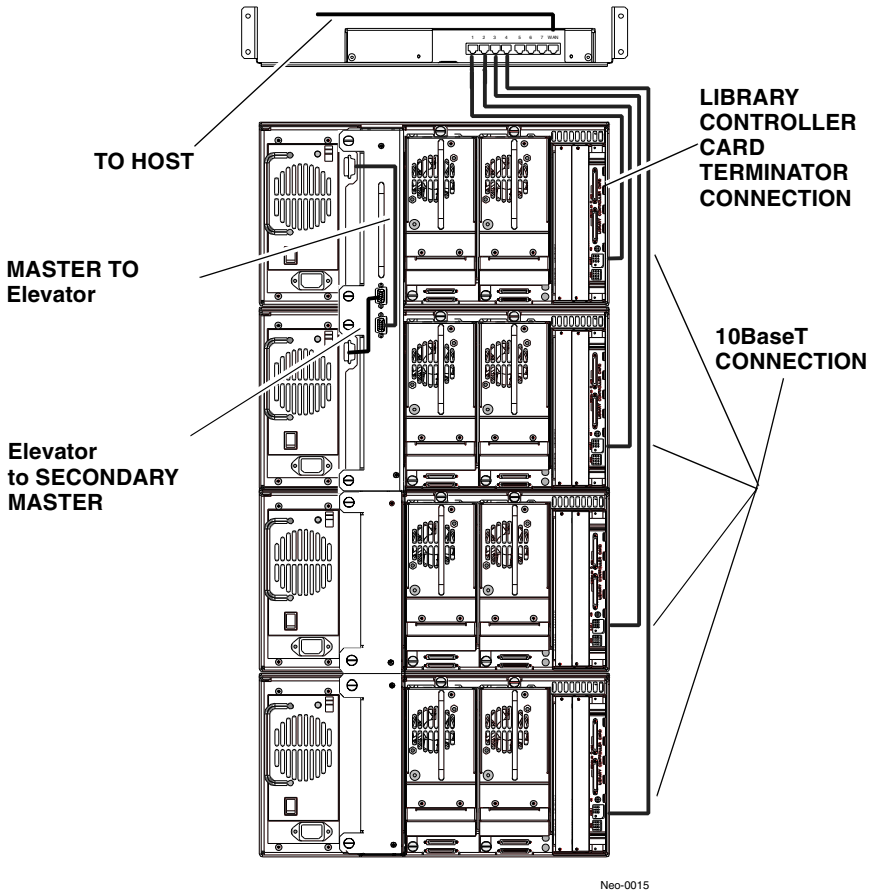


Figure C–33. Typical Library Cabling

2) Install terminator on Master Library Controller Card connection.

3) **Optional:** With power removed from both the router and the Neo modules, connect the WAN point to the host with a 10BaseT cable, see Figure C–2 and Figure C–33. This step is applicable to systems that utilize a Host. (For WEB TLC operations)

4) Using10BaseT cable, connect cable from Router port 1 to the top Neo Series module (Primary Master), see Figure C–2 and Figure C–33.

5) Connect cable from Router port 2 to the second module in the stack (Secondary Master).

6) Continue connecting cables, Router port 3 to the third module, port 4 to the fourth module and so on until all modules are connected to the router.

NOTE: Ensure power is off before proceeding with steps 7 and 8

7) Connect the male to male 9-pin cable from the Primary Master to the lower serial port connection on the Elevator Assembly, see Figure C–33.

8) Connect the other 9-pin cable from the Secondary Master (module 2 in this example) to the upper serial port connection on the Elevator Assembly, see Figure C–33.

NOTE: The 9-pin Elevator cable to the Secondary Master module enables the firmware (by operator initialization) to initiate a fail-over from the Primary Master (Active) to the Secondary Master (Standby) and designate it as the Secondary Master (Active).

9) Verify and or the connect power cord to the Router.

10)Apply power to the Router.

NOTE: The Router must be powered up before the Neo modules.

11)Turn on the library modules as follows, see Figure C–34.

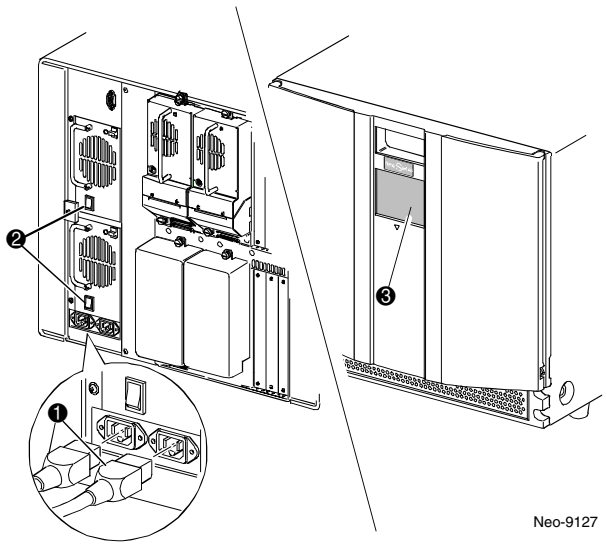


Figure C–34. Powering up the Library

1. Connect the power cord to the power supply's receptacle (❶).

   a.Toggle the power switch located on the power supply to ON (❷).

   b.Repeat (a) through (b) for all modules connected to the Elevator Module.

   c.Press anywhere on each of the GUI touch screens of the Slave modules first and the Master GUI last to apply power to the modules (❸).

Verifying Firmware Level of the Slave Modules

To ensure reliable multi-module operation, the slave modules must be at the same firmware level as the Master module. The firmware of the slave modules can be flashed using the firmware image of the Master.

Verify the firmware level of the slave modules as follows:

1) After the POST completes, press Menu on the first slave module.
2) Press Library Info in the View System Data area.
3) The firmware revision appears on the Miscellaneous Library Info screen.
4) Repeat steps (1) through (3) for the other Slave modules.

If any of the slave modules are at a different firmware level than the Master, flash the multi-module system using the Master module GUI (if firmware Version 2.33 or higher is installed). WEB TLC or the NeoCenter utility connected to the Master module may also be used to flash the modules.

NOTE: Refer to the Neo Series Installation and User Manual for instructions on using the NeoCenter Utility or the WebTLC to upgrade the firmware. For additional assistance, contact Overland Storage Technical Support.

After the flash operation completes, the slave modules will reboot. After completion of the POST, the system is ready for operation.

Fail-over Operation

Introduction

The Neo Series Library in a multi-module configuration allows one of the slave modules to take over control of the library as a temporary master in case the primary master module is not operational (referred to as Fail-over). The fail-over is a manual procedure that needs to be initiated by an operator, either locally using the Graphical User Interface (GUI), or remotely using Web TLC. Although the intent is to initiate a fail-over operation when it is determined that the master module is in a hard fault condition, it can be initiated at any time (for testing purposes, for example). This section describes the terminology and methodology used to initiate a fail-over operation, and to restore the library to its normal operating condition.

Fail-Over Terms

Primary Master (Active): a module which is configured as Master, connected to the Primary Elevator port, and the library is operating normally.

Secondary Master (Standby): a module which is configured as Slave, connected to the Standby Elevator port, and the library is operating normally.

Secondary Master (Active): a module which is configured as Slave, connected to the Standby Elevator port, and the library is in a failed-over condition.

Primary Master (Inactive): a module which is configured as Master, connected to the Primary Elevator port, and the library is in a failed-over condition.

Failed-Over: the condition of a multi-module library, where a designated Slave module will temporarily act as a Master module in the event of a failure of the primary Master module.

Cabling Considerations for Fail-Over Operation

To allow proper Fail-over operation, the SCSI connection to the Primary and Secondary Master should be daisy-chained. This allows the Secondary Master to assume control of the SCSI Bus if the Primary Master fails.

Fail-Over Initiation

In order for a fail-over operation to take effect, the library modules must be correctly cabled to the Elevator hardware, as described in "Cabling and Interface Connections":

a. The Master module must be connected as the Primary Master, see Figure C–33.

b. One of the slave modules must be connected as the Secondary Master, see Figure C–33.

Local Fail-Over to Secondary Master Initiation

The fail-over operation should be initiated when it is determined that the Primary Master module is in a hard fault condition.

1) From the Secondary Master Graphical User Interface (GUI), select Menu.

Figure C–35. Secondary Master Screen

2) Select Maintenance.

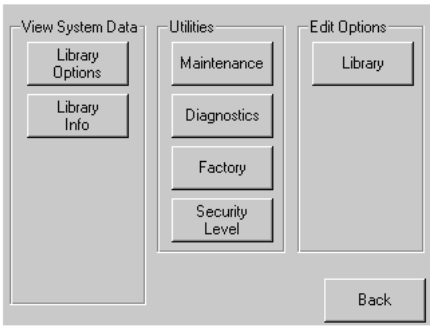


Figure C–36. Secondary Master Menu Screen

3) Select Fail-Over to Secondary Master.

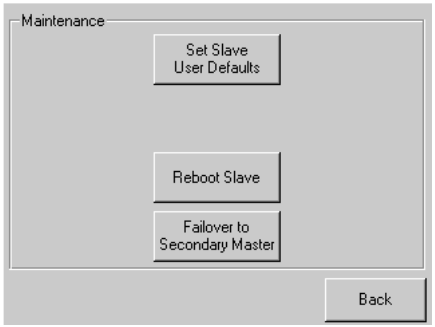


Figure C–37. Secondary Master Maintenance Screen

The Library will transfer control of the Elevator to itself, power down the Primary Master then Reboot.

Remote Fail-Over to Secondary Master Initiation

1) If the library is connected to a network, use a Web browser to connect to the library's fail-over URL, which uses the same IP address of the library's Web TLC, but uses port 8008. For example, if the Web TLC address is 10.1.15.77, the fail-over URL will be:

http://10.1.15.77:8008

2) Login
3) Select Fail-over to Standby Module
4) Confirm that you want to Fail-over to the Standby Module.
5) The Secondary Master will then transfer control of the Elevator to itself, power down the Primary Master, and then reboot.

Restoring Normal Operation

After the failed module is serviced (or replaced) and installed back into the library, a procedure similar to the one described in the previous section can be invoked to restore the original operation.

In order for the restore operation to take effect, the (future) Master module must be connected as the Primary Master. (Inactive)

Local Fail-over to Primary Master

1) From the Secondary Master Graphical User Interface (GUI), select Menu.

Figure C–38. Secondary Master Screen

2) Select Maintenance.

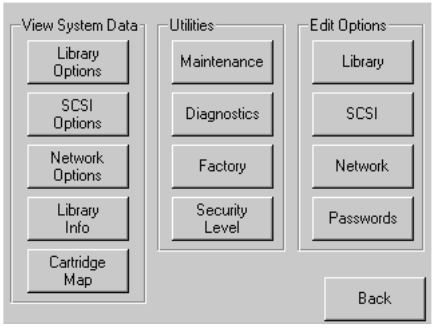


Figure C–39. Secondary Master Menu Screen

3) Select Fail-over to Primary Master.

The Secondary Master will then transfer control of the Elevator back to the Primary Master, then reboot.

After rebooting, the modules will revert back to their default configurations and the library will be fully operational.

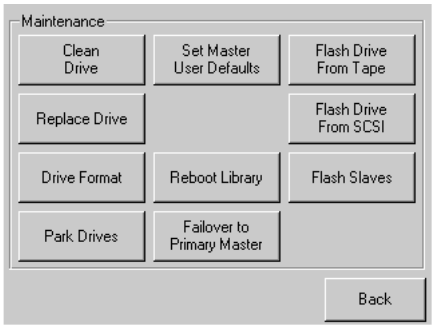


Figure C–40. Secondary Master Maintenance Screen

Remote Failover to Primary Master

1) If the library is connected to a network, use a Web browser to connect to the library's Web TLC URL, using the default HTTP port, Login and select Functions.
2) Confirm that you want to Fail Over to the Primary Master Module.

The Secondary Master will then transfer control of the Elevator back to the Primary Master, then reboot.

After rebooting, the modules will revert back to their default configurations and the library will be fully operational.

Appendix D Partitioning

Introduction

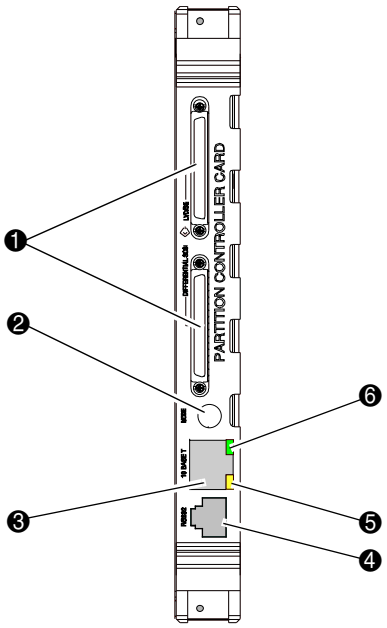
Partitioning is a method in which cartridges, magazines and drives can be “virtually” separated for the convenience or use of the host or host software. Partitioning allows multiple servers to use the same physical library while maintaining control of their allocated resources. Partitioning creates ‘Virtual Libraries’.

Library partitioning is based upon representing each partition as a separate SCSI device. To the host, each partition looks like a separate SCSI medium changer device.

The minimum number of partitions is one, which would assign all elements in the library at the same SCSI ID. The maximum number of partitions is the number of magazines in the library. In a fully loaded library, the maximum number of magazines is sixteen, which would allow the configuration of up to sixteen SCSI devices.

Library partitioning is realized by the addition of a Partition Controller Card. Each controller card may be connected directly to the SCSI bus of a server or daisy-chained to another SCSI bus.

Controls and Indicators:



Partition Controller Controls &

❶ SCSI VHDCI Port (2)
❷ Mode Switch
❸
❹ RS232 Port
❺ LAN Activity LED

Figure D–1. Partition Card Indicators

Partitioning Controller Card Installation

Remove Filler Plate

1) Power down the Neo library.
2) Using a No."0" Phillip's screwdriver, remove one of the Virtual Interface Architecture option bay filler plates by removing the upper and lower retaining screws, see Figure D–2. Keep the filler plate for future use.

NOTE: The library controller card must always be housed in the far right PCI slot. Insertion of an option card into this slot may damage the PCI backplane and render the library inoperable.

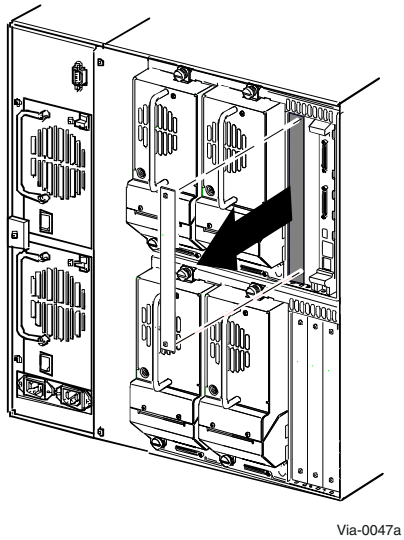


Figure D–2. Filler Plate Removed

Install Partition Controller

1) Carefully insert the Library Partition Controller card into the upper and lower guide rails of the option bay, see Figure D–3.
2) Slide the Library Partition Controller card into the option bay. Resistance will be felt when the partition controller card begins to mate with the library backplane.
3) Apply just enough force to seat the partition controller card snuggly into the library backplane to ensure proper connectivity.
4) Tighten the hold down screws for the Library Partition Controller card.
5) Connect the SCSI and RJ45 cables for your desired configuration, see "Cabling Configuration Examples" in this appendix or the Quick Install included with your partioning card.
6) Power up the Neo Series Library.

NOTE: To assure proper operation, the Neo Router and cabling must be installed before appling power to any Neo Series module(s) with a Partition Controller Card.

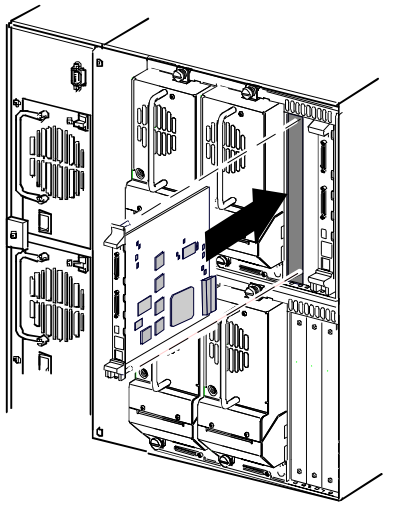


Figure D–3. Partition Card Install

Rackmounting the Router and Switch

NOTE: For pre-existing multi-module users; if a router is currently installed and only the Partitioning Controller is added, install the card as described above and follow the cabling examples on the back page to make the correct SCSI and RJ11-DB9 cable connection. Then connect the 10 Base T ports on the partition controller card(s) to available ports on the router. A switch is required when all router ports are utilized.

1) Remove the 16 port switch and/or router, mounting brackets, and bracket screws from the packaging.
2) Attach the mounting brackets to each side of the switch/router, using the provided bracket screws, (8, switch) (4, router), see Figure D–4.
3) Fasten each of the mounting brackets to the front of the rear rail of the rack using two 10-32 screws and one nut plate, or 2 U-Type 10-32 clips, see Figure D–5.

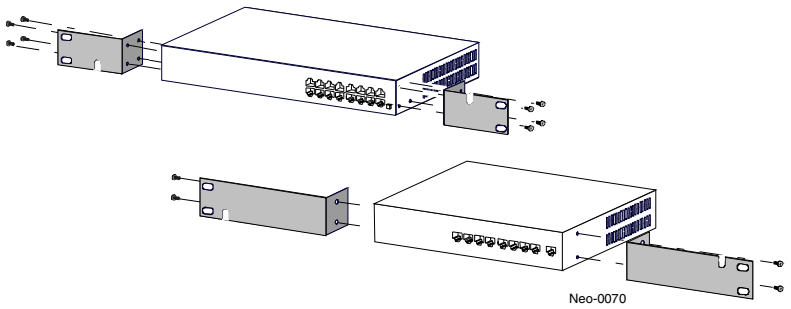


Figure D–4. Bracket Assembly

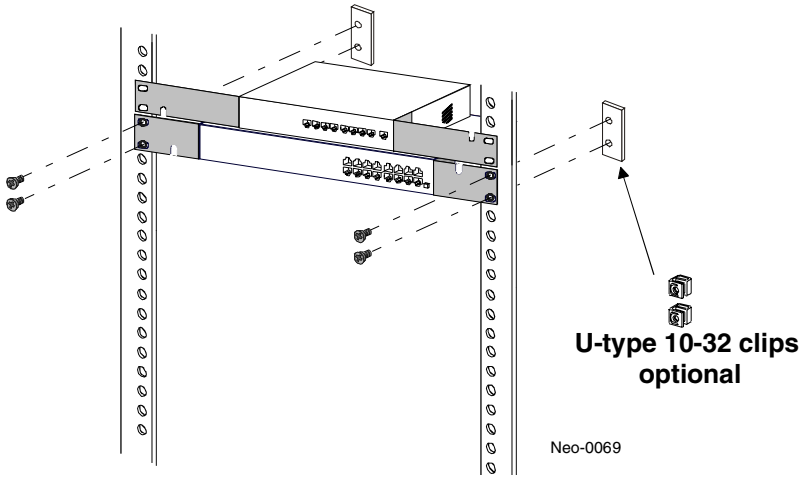


Figure D–5. Router/Switch Rackmounted

Adding A Switch

Figure D–6 The below graphic illustrates in a simplified view the necessary physical connection for adding a switch. **Figure D–9** illustrates a functional example of a multi-module library requiring a switch.

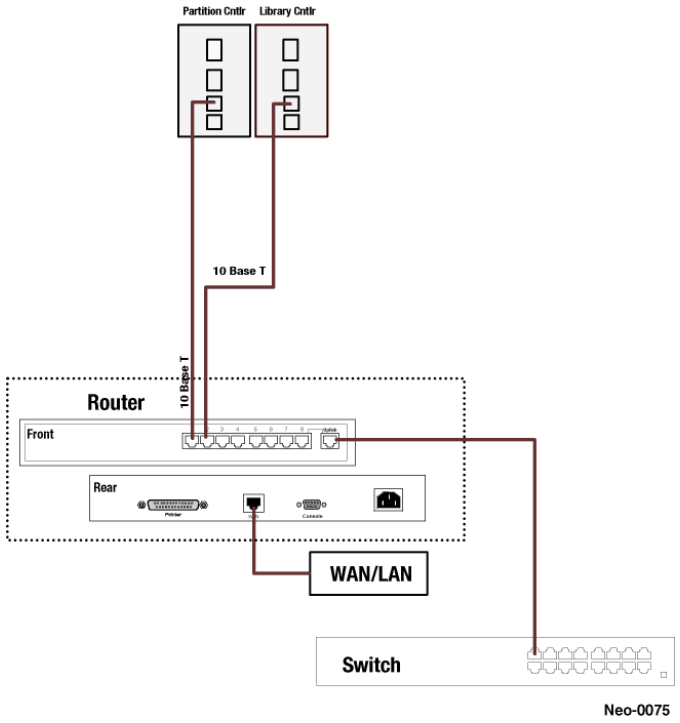


Figure D–6. Adding a Switch

NOTE: The partition controller cards and the library controller cards can be on the same SCSI bus or on separate SCSI buses, Each SCSI bus must be terminated. Each card must be connected to an ethernet connection on the router or switch.

NOTE: To assure proper operation, the Router and cabling must be installed before appling power to any Neo Series module(s) with a Partition Controller Card.

Cabling Configuration Examples

2 Partition Neo Series 2000

1) Connect Drive 1 to one of the SCSI ports on the library controller, see Figure D–7.
2) Connect Drive 2 to one of the SCSI ports on the partition controller.
3) Connect a terminator to both Drive 1 and Drive 2.
4) Connect the remaining SCSI port on the library controller to Host A.
5) Connect the remaining SCSI port on the partition controller to Host B.
6) Connect the RJ11-DB9 cable between the connector labeled RS232 on the master library controller card and a COM port on the host computer with NeoCenter software.

NOTE: DO NOT connect directly into the network. The use of a Neo router is required.

7) Connect the 10 Base T ports on the partition and library controller cards to the router.
8) Make the connection from the WAN port on the router to the WAN/LAN.
9) Power up the Neo libraries.
10) Configure partitions using Neo Center, see "Library Partitioning" in the "NeoCenter Utility" chapter in this manual.

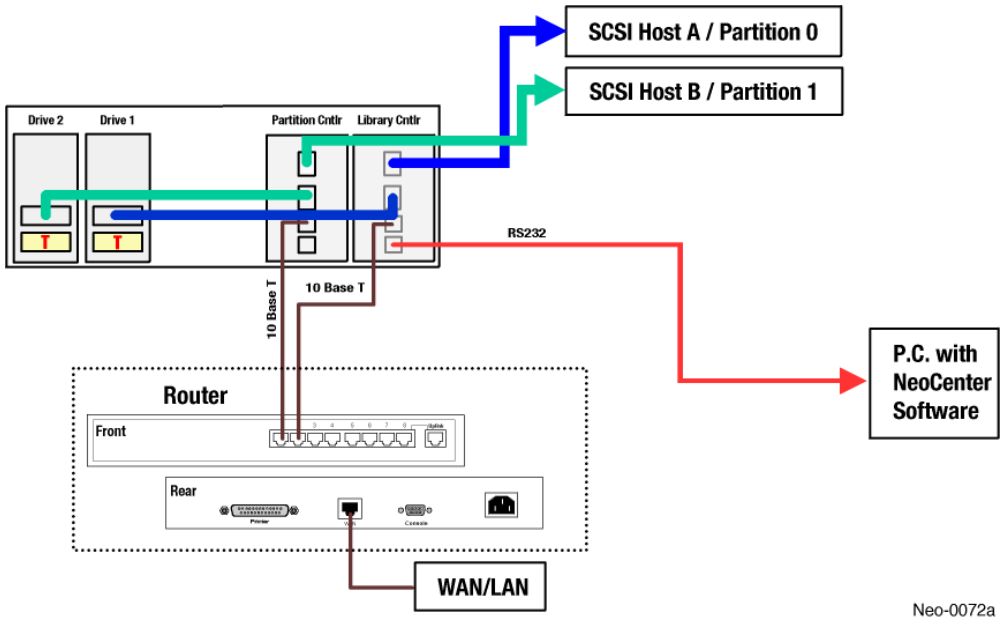


Figure D–7. 2 Partition Neo Series 2000

2 Partition Neo Series 4000

1) Connect Drive 1 to one of the SCSI ports on Drive 2. (Daisy-chain), see Figure D–8.
2) Connect Drive 1 to one of the SCSI ports on the partition controller card.
3) Connect a terminator to Drive 2 and Drive 4.
4) Connect Drive 3 to one of the SCSI ports on Drive 4. (Daisy-chain).
5) Connect Drive 3 to one of the SCSI ports on the partition controller card.
6) Connect the remaining SCSI port on the library controller to Host A.
7) Connect the remaining SCSI port on the partiton controller to Host B.
8) Connect the RJ11-DB9 cable between the connector labeled RS232 on the master library controller card and a COM port on the host computer with NeoCenter software.

NOTE: DO NOT connect directly into the network. The use of a Neo router is required.

9) Connect the 10 Base T ports on the partition and library controller cards to the Neo router.
10) Make the connection from the WAN port on the Neo router to the WAN/LAN.
11) Power up the Neo libraries.
12) Configure partitions using Neo Center), see "Library Partitioning" in the "NeoCenter Utility" chapter in this manual.

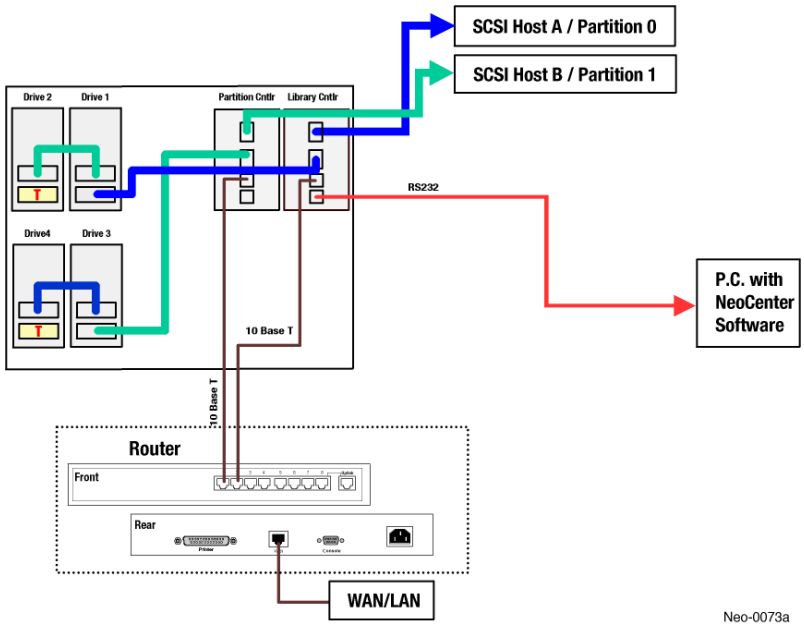


Figure D–8. 2 Partition Neo Series 4000

Multi-Module 8 Partition Neo Series 2000

1) Connect Drive 1 to one of the SCSI ports on the library controller card on the module designated as the master, see Figure D–9.
2) Connect Drive 2 to one of the SCSI ports on the partition controller card.
3) Connect a terminator to Drive 1 through Drive 6. (see figure).
4) Connect each drive to one of the SCSI ports on one of the available partition controller cards.

NOTE: DO NOT connect directly into the network. The use of a Neo router is required.

5) Connect the remaining SCSI port on the master library controller to Host A.
6) Connect the remaining SCSI ports on the partition controller cards to Host B through Host H, as illustrated.
7) Connect the RJ11-DB9 cable between the connector labeled RS232 on the master library controller card and a COM port on the host computer with NeoCenter software.
8) Connect seven of the 10 Base T ports on the partition and library controller cards to the router.
9) Connect four of the 10 Base T ports on the partition and library controller cards to the switch.
10) Connect the router to a switch using the uplink port, see figure.
11) Make the connection from the WAN port on the Neo router to the WAN/LAN.
12) Power up the Neo libraries.
13) Configure the partitions using Neo Center, see "Library Partitioning" in the "NeoCenter Utility" chapter in this manual.

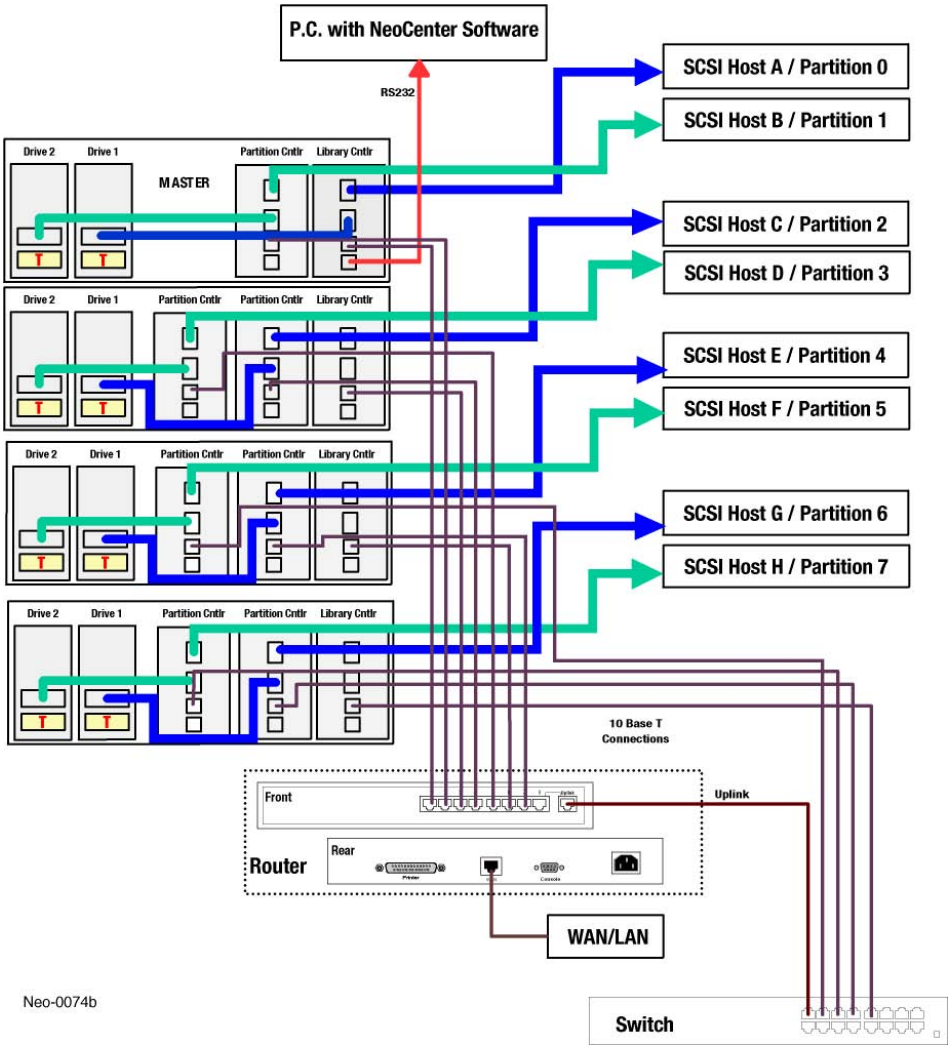


Figure D–9. Multi-Module 8 Partition Neo Series 2000

Appendix E Tape Drive Technologies

Introduction

The Neo Series family of storage libraries use a variety of tape and drive media, dependent upon customer preference. The following sections describe the various tape technologies and their capacities.

Capacities

Table E-1 Models & Slot Capacities

Model	Drive/	Slots	Capacity			
			SDLT220	SDLT 320	DLT8000	LTO
Neo 4100	1-4	52 DLT/SDLT, 60 LTO	11.4 TB	16.6 TB	4.1 TB	12 TB
Neo 4200	2-8	104 DLT/SDLT, 120 LTO	22.8 TB	33.2 TB	8.3 TB	24 TB
Neo 4300	3-12	156 DLT/SDL,T 180LTO	34.2 TB	49.9 TB	12.4 TB	36 TB
Neo 4400	4-16	208 DLT/SDL,T 240 LTO	45.6 TB	66.6 TB	16.6 TB	48 TB
Capacity Expansion Chassis(s)*						
26/30EXP	0-2	26 DLT/SDL,T 30 LTO	5.7 TB	8.3	2.1 TB	6 TB
52/60EXP	0-4	52 DLT/SDLT, 60 LTO	11.4 TB	16.6	4.1 TB	12 TB
* Expansion chassis contains a library controller controller card and no drives.						

DLT and SDLT Technologies

DLT

Designed for enterprise networking systems of workgroups, intranets and extranets, the DLT1 drive backs up an entire small to medium sized server or workstation on a single DLTtape IV cartridge. Based on the industry standard DLTtape™ technology, the DLT1 delivers fast and dependable performance. It easily integrates into your existing or new network system, as the DLT1 works with practically all the popular backup software packages and hardware platforms.

Benefits

- Native capacity of 40 GB at 3 MB/s
- 2:1 Compression allows 80 GB at 6 MB/s
- Read compatible with the DLT 4000 format
- Industry standard

- Open system, supported by many manufacturers
- More than 200,000 hours MTBF at 100% duty cycle

SDLT220

Super DLT tape incorporates multiple advances in technology, achieving huge increases in capacity and transfer speed. More importantly, it provides a viable evolutionary path to further leaps in capacity and performance in the future, while maintaining compatibility with the world's huge installed base of DLTtape® cartridges.

Benefits

- Native capacity of 110 GB at 11 MB/s transfer rate
- 2:1 Compression allows 220 GB at 22 MB/s
- Technology designed to reach 2 TB capacity at 160 MB/s
- Fully backward read compatible with DLTtape IV cartridges
- Advanced Metal Powder Media allows the optical servo tracks onto the reverse side of the tape
- 100% of tape's magnetic side freed up to record data
- No need for magnetic pre-formatting
- Laser Guided Magnetic Recording combines best of optical and magnetic technologies
- Pivoting Optical Servo increases high duty cycle reliability
- Magneto-Resistive Cluster Heads for the highest data density
- High efficiency PRML Channel creates more tracks on the tape
- Increased media capacity provides easier use and lower cost of ownership

SDLT320

The SDLT 320 offers large capacity and high speeds. It offers the lowest cost per GB available and, as part of the DLTtape product family, enjoys the highest industry acceptance. It is backward read compatible with DLTtape IV media and uses the same Super DLTtape I cartridges as the SDLT 220, preserving your data storage investments. The SDLT 320 is specifically designed for the high duty-cycle requirements of high-end and automated environments.

Benefits

- Stores more data (320 GB compressed) and accesses it faster (32MB per second) than any other comparable media.
- Low cost per GB.
- Backward-read compatible with DLTtape IV media and uses Super DLTtape I cartridges, preserving data storage investments.

- Specifically designed for the high duty-cycle requirements of high-end and automated environments and is rated at 250,000 hours MTBF at a 100% duty cycle.
- DLTtape technology is a trusted and compatible platform in the industry.
- Super DLTtape technology is widely available from the world's leading OEM brands.

LTO Technology

The Ultrium tape format is the implementation of the LTO (Linear Tape-Open) Technology that is optimized for high capacity and performance with exceptional reliability in either a stand-alone or an automated environment. It uses a single reel cartridge to maximize capacity. Ideally suited for backup, restore, and archive applications.

Benefits

- High Capacity: provides typical capacity of 200 GB native capacity (2:1 compression). To match your capacity, performance, and cost requirements, the format also calls for 20, 60, 100 and 200 GB cartridges (assuming 2:1 compression).
- High Native Data Rate: Ultrium provides for data transfer rates of 20-40 MB/second (2:1 compression) for the first generation of the 8-channel version.
- LTO-CM (Cartridge Memory): Enhances functionality by providing a redundant file log as well as user defined information. An external reader allows immediate access to that information without having to insert the cartridge into a drive.
- LTO Technology: Ultrium takes advantage of LTO Technology's proven error correction and data compression techniques.
- Flexibility: By specifying only those features needed for interchange of tape cartridges, the Ultrium format retains flexibility. This flexibility allows for a substantial amount of implementation freedom with respect to performance characteristics, form factor, reliability, controllers, and interfaces - while tape cartridges remain interchangeable among Ultrium tape drives.
- Consistent Servo: The servo format is expected to remain consistent throughout the life of the product line. This major benefit enables manufacturers to leverage investments.
- Multi-sourcing: Multiple sources for media and drives reduce production bottlenecks and also ensures investment protection for OEMs and end users alike.